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EMPLOYER ATTITUDES AND

THEIR INTENT TO SUPPORT BREASTFEEDING IN

THE WORKPLACE

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EMPLOYER ATTITUDES AND THEIR INTENT TO SUPPORT BREASTFEEDING IN THE WORKPLACE

by

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Dedication

I have the strength for everything through him...

To my grandmother, Hilda Jones, for I know you are by my side each day...

For my mother and father, Nelwyn and Ed Polston, for your love and support...

To my husband Brady, for his constant support and understanding...

To my girls, Ryan and McClane, never give up.

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Finally, thank you to my family, for without you and your constant support, thoughts and prayers this dissertation would not have been possible.

EMPLOYER ATTITUDES AND

THEIR INTENT TO SUPPORT BREASTFEEDING IN

THE WORKPLACE

Susan Polston Mills, PhD

The University of Texas at Austin, 2011

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New mothers struggle to combine breastfeeding and employment. Employers may not realize the benefits of breastfeeding for mothers, their infants, or the businesses themselves. A cross-sectional, descriptive design was used to investigate the characteristics of Central Texas small business employers, their attitude toward supporting breastfeeding in the workplace and explored factors that may mediate or moderate employers' support of breastfeeding in the workplace. Rogers' Diffusion of Innovation theory guided the study. Data were collected using a Business Characteristics Survey and the Employer Intention to Support Breastfeeding Questionnaire (ESBQ). The final response rate was 148 complete surveys out of the 3817 sent, resulting in a 3.8% response rate.

Descriptive statistics showed that 65.5% had some type of lactation support (n = 97) in place for their breastfeeding employees; however only 34.5% provided a designated, private room/place to pump breast milk. Logistic regression of the independent variables attitude (b = .034, p = .535), centralization (b = .045, p = .222), and interconnectedness (b = .002, p = .695) did not predict the presence of lactation support. Business size was not a significant predictor

of the presence of lactation support (b = .001, p = .921). The moderator of intent was added to the model and interaction terms created by multiplying intent with each of the following variables: business size, attitude, centralization, and interconnectedness. These results did not support the presence of a moderating effect.

Finally, mediator effects were only tested with the independent variable attitude. A significant direct association between attitude and the presences of lactation support was found (p = .045). Attitude appears to be a significant predictor of relative advantage (b = 4.583, p <.001). Relative advantage, while controlling for attitude, was not a significant predictor of presence of lactation support (b = .013, p = .220); however, the direct relationship of attitude to the presence of lactation support was less significant than before (b = .029, p = .655). Attitude appears to be a significant predictor of complexity (b = .407, p <.001). Complexity, while controlling for attitude, was not a significant predictor of presence of lactation support (b = .059, p = .285); however, the direct relationship of attitude to the presence of lactation support was less significant than before (b = .065, p = .181). Attitude appears to be a significant predictor of observability (b = .916, p = .003). Observability, while controlling for attitude, was not a significant predictor of presence of lactation support (b = -.003, p = .834); however, the direct relationship of attitude to the presence of lactation support was less significant than before (b = .091, p = .047). The implications and recommendations based on these findings can help to guide future studies and the planning and implementation of workplace lactation programs.

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CHAPTER ONE: INTRODUCTION

Improving the rate of mothers who breastfeed has been a national goal since the inception of the Healthy People Initiatives. In the 1990s, increasing the rate of breastfeeding was an objective of the original Healthy People, with a year 2000 target of 75% of women breastfeeding in the early postpartum period and 50% of women breastfeeding for between five to six months postpartum (U.S. Department of Health and Human Services [USDHHS], 1997). By 1995, 59% of mothers were breastfeeding in the early postpartum period and 22% of mothers were breastfeeding to between five and six months (USDHHS, 2006). The objectives were modified with Healthy People 2010, expanding the scope to target breastfeeding up to one year and exclusive breastfeeding (USDHHS, 2000a).

Among the forty-two focus areas of Healthy People 2020 (USDHHS, 2011a), the Maternal, Infant, and Child Health (MICH) Objective 21 aims to increase the proportion of infants who are breastfed. The target of this aim is to have 81.9% of mothers reporting that they "ever" breastfed, 60.6% at six months, and 34.1% at one year (USDHHS, 2011a). The goal for exclusive breastfeeding is that 46.2% of mothers exclusively breastfeed their infants through 3 months of age and 25.5% through six months of age (USDHHS, 2011a). In 2010, the State of Texas was falling short of the Healthy People 2020 goals. Only 75.8% of mothers reporting that they “ever breastfed”, this number dropped drastically to 43.6% at six months and to 21.8% for those mothers that reported that they continued to breastfeed at 12 months (Centers for Disease Control [CDC], 2010). This rate was lower than the previous CDC *Breastfeeding Report Card* where 78.2% of mothers reporting that they “ever breastfed." This number dropped drastically to 48.7% at six months and to 25.3% for those mothers that reported

that they continued to breastfeed at 12 months (CDC, 2010). The latest figures also show that exclusive breastfeeding at three and six months dropped. Only 27.6% of mothers in Texas reported exclusive breastfeeding at three months and 11.1% of mothers were exclusively breastfeeding at six months (CDC, 2010).

The objective to increase the proportion of mothers who breastfeed their babies has been retained for Healthy People 2020. However, new to the Healthy People 2020 objectives is Maternal, Infant, and Child Health (MICH) goal HP2020-22, “Increase the percentage of employers who have worksite lactation programs” (USDHHS, 2011a). The target is that 38% of employers report providing an on-site lactation/mother's room. The public comments posted in response to this draft objective stressed the importance of such programs and that returning to work remains the biggest barrier to the increased duration of breastfeeding. The posted comments also emphasized the benefits of such programs to employers. For example, the U.S. Breastfeeding Committee (USBC) feels that such an objective would shift the focus from individual behavior to environmental determinants of breastfeeding and would provide a basis for the USBC to advocate for improved infrastructures to close the gap between evidence that "breast is best" for infants and the practice of breastfeeding. Another commenter, the International Formula Council (IFC), suggested that the objective could be strengthened by adding a sub-objective that focuses on increasing the percentage of employers who offer workplace lactation programs for hourly and lower-wage workers.

Clearly breastfeeding has been a priority with Healthy People 2000 and 2010 and remains a priority for the Federal government with Healthy People 2020. The U.S. Department of Health and Human Services now recognizes the role that employers play in a breastfeeding mothers' success.

Background and Significance

Breastfeeding is recognized as the best source of nutrition for infants and the research shows that the benefits of breastfeeding extend to mothers. Breastfeeding has been shown to reduce the infection and disease burden for both the infant and mother. The American Academy of Pediatrics (AAP, 2005) recommend that infants be breastfed for 12 months and exclusively breastfed for the first six months of life. However, the benefits of breastfeeding extend beyond the mother and infant such that an employer can realize some indirect benefits of breastfeeding. Employers can realize a cost savings for every working mother that continues breastfeeding upon return to work. Often, however, employers may not recognize the benefits that breastfeeding can have on their business.

Mothers return to work, on average, at ten weeks postpartum (Nichols & Roux, 2004) and are faced with multiple challenges that interfere with the continuation of breastfeeding when they return to work. However, Han, Ruhm, Waldfogel, and Washbrook's (2008) research revealed that by three months postpartum, almost 45% of all mothers had returned to work and by nine months postpartum this number climbs to 60% (Han et al., 2008). Thirty-seven percent of these mothers return to full-time employment after the birth of a child (Han et al., 2008). Studies have indicated that working mothers will continue to breastfeed for shorter periods of time, as compared to mothers who are not working, or who are employed part-time (Dunn, Zavela, Cline, & Cost, 2004; Libbus & Bullock, 2004; McKinley & Hyde, 2004; Ryan, Zhou, & Arensberg, 2006; Witters-Green, 2003). Returning to work does not predict a mother's initial intent to breastfeed her newborn, rather it is a predictor of the duration of breastfeeding (Kimbro, 2006; Ortiz, McGilligan, & Kelly, 2004; Ryan et al., 2006). In addition, the type

of employment may factor into a mother's decision of whether or not breastfeed her newborn, exclusively breastfeed, and may influence the decision of when to wean (Meek, 2001; Ryan et al., 2006). Kimbro (2006) noted that women in manual or administrative positions will have a 1.34 and 1.35, respectively, greater odds of quitting breastfeeding when compared to stay at home mothers. Bronner indicates that traditionally it is low-income women who return to work earlier and work in positions that make breastfeeding difficult (as cited in Khoury, Moazzem, Jarjoura, Carothers, & Hinton, 2005). These women, ironically, would benefit the most financially by breastfeeding; however, these mothers are often forced to choose between breastfeeding and employment. Raju (2005) believes that greater barriers exist for breastfeeding for those women in low wage jobs when compared to women in higher-wage jobs.

A gap in the knowledge exists regarding employers' attitudes and intent to support breastfeeding in the workplace. There have been many studies published about the combination of breastfeeding and employment; however, the majority of studies focus on the mothers' perceptions and issues upon their return to work. The studies that have focused on employers have primarily examined the outcomes of workplace lactation programs and only three quantifiably assessed employer attitudes and intent to support breastfeeding in the workplace. This study seeks to narrow the knowledge gap about an employer's attitude and his/her support of breastfeeding in the workplace. This knowledge will assist nurses in the development of tailored workplace lactation programs based on employer characteristics. Additionally, such knowledge can assist with Federal, State, and local policy development, as well as compliance with the newest legislation in the Patient Protection and Affordable Care Act.

Purpose

The purpose of this cross-sectional, descriptive study is to assess employers' attitudes and their intent to support breastfeeding in the workplace. Employers are a crucial link in the breastfeeding mother's success through the provision of lactation support; however, most employers do not place a high priority on breastfeeding in the workplace. With 60% of women returning to work by nine months postpartum, of which 37% return to a full-time position, more women are returning to work than ever following childbirth (Han et al., 2008). Many businesses are indirectly forcing women to choose between the desire to provide the best nutrition for their infant and the financial necessity of returning to work. While employers may understand the benefits of breastfeeding to the mother and infant, many do not realize the benefits that breastfeeding can provide their businesses. Many variables may factor into an employer's decision to provide a workplace lactation program including the business size and who within the business makes the decision to provide such programs. Additionally, an employer's attitude toward breastfeeding may factor into the decision to provide a lactation support program for breastfeeding mothers who have returned to work.

Statement of the Problem

Employers may impose constraints, unknowingly or willingly, on breastfeeding working mothers that result in undue stress on the mother. Additionally, there is a perception by the mother that breastfeeding and work have to be mutually exclusive. It is at this crossroad when a breastfeeding mother returns to work that employers can play a pivotal role in making the combination of breastfeeding and full-time employment a positive experience and successful for the employed mother (Mills, 2009).

Studies have revealed differing degrees of knowledge regarding the benefits of breastfeeding for the infant, mother, and for the business. Breastfeeding support practices, such as a dedicated space and flexible scheduling, in the workplace are inconsistent. Frequent barriers to breastfeeding in the workplace are time, space, poor employee relations, decreased productivity, and concern about financial or liability issues (Brown, Poag, & Kasprzycki, 2001; Witters-Green, 2003). Lack of appropriate space combined with a lack of shift coverage make it less likely that women will continue breastfeeding after returning to the workforce (Corbett-Dick & Bezek, 1997). Finally, employers perceive a lack of necessity to provide breastfeeding support services, such as lactation consultants. These barriers create constraints for the mother employed full-time who wishes to breastfeed, thereby influencing duration (Dunn et al., 2004).

Additionally, employers vary in their attitudes and practices towards the breastfeeding mother. Employers who breastfed their own infants, may not place high priority on providing consistent breastfeeding support to their employee, but provide support on an “as-needed” basis (Brown et al., 2001). Employers often feel that breastfeeding is a personal choice and not the responsibility of the employer (Dunn et al., 2004).

There is a gap in the knowledge about small business employers' attitudes and their intent to support breastfeeding in the workplace. This study focuses on the Healthy People 2020 objective to increase the percent of workplace lactation programs, by seeking to understand why small business employers may or may not support the breastfeeding working mothers. Lactation programs or lactation support in the workplace will benefit baby, mother, and employer by prolonging the duration of

breastfeeding, thereby indirectly addressing the Healthy People objective to increase the proportion of mothers who breastfeed.

Research Questions

The research questions for this study are:

1. What is the proportion of workplace lactation programs in small businesses in Central Texas?
2. What are the employer characteristics (number of female employees, type of benefits offered, type of business) of small businesses in Central Texas who provide lactation support?
3. What is the predictive relationship among employer attitude, centralization, and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace?
4. What is the predictive relationship between business size and the presence of lactation support in the workplace?
5. What influence does intent to support breastfeeding in the workplace have on the presence of lactation support?

Theoretical Framework

The theory of Diffusion of Innovation (DOI), used to guide this research, has its roots in the cornfields of Iowa. In 1943, Ryan and Gross published a paper about the diffusion of hybrid seed corn. New to the Iowan farmers, the hybrid seed was hardier and more drought resistant than its predecessor. The study revealed that it took 13 years for the diffusion process to occur in the fields surrounding the two communities they studied. Additionally, this diffusion process took on an "S-shaped" curve over time, meaning that adopter distribution rises slowly at first and then accelerates to a maximum

until half of the individuals or organizations have adopted the innovation. The rate then slows as fewer and fewer adopt the innovation (Rogers, 2003). One key finding of this study was the adoption of the hybrid seed was influenced by the information-sharing of subjective experiences between neighboring farmers, supporting the notion that diffusion is a social process.

Since the 1940's, the DOI theory has been applied to anthropology, sociology, education, communication, marketing and management, geography, and public health. One of the most cited studies using the DOI theory in public health is the STOP AIDS in San Francisco project (Singal & Rogers, 2003). The purpose of this project was to prevent the spread of HIV/AIDS among gay men. Guided by the DOI theory, the program recruited gay men as outreach workers and conducted the educational interventions in the bars that gay men frequented. As a result, San Francisco experienced a dramatic drop in diagnosed cases of HIV in the mid-1980s. This demonstrated the power of DOI and its concepts such as homophily, the extent that two or more people who communicate perceive themselves as similar, and opinion leaders, those who are respected for their knowledge and reputation on a particular topic.

Diffusion of Innovation theory has also been used as the framework for employee wellness programs. Gates, Brehem, Hutton, Singler, and Poeppelman (2006) utilized this theory to guide focus group questions. The questions were used to identify workplace strategies to reduce barriers and develop appropriate communication channels to enhance employee participation in an obesity prevention program.

Diffusion of Innovation Defined

According to Rogers (2003), diffusion is defined as "the process by which an *innovation* is *communicated* through certain channels over *time* among the members of

a *social system*" (pg. 11). The four critical elements of diffusion are innovation, communication, time, and the social system.

Innovativeness can be a result of an individual or organization and is defined the degree that an individual or organization adopts a new idea relative to other ideas currently being utilized. Innovation is the perception that an idea, practice, or object is new by an individual or organization (Rogers, 2003). The characteristics of an innovation determine the rate of adoption. These characteristics are relative advantage, complexity, trialability, and observability.

Communication, or the means that messages get from one individual to another, is the second element in diffusion. Communication channels can be through the mass media or between individuals. Rogers (2003) cites that most innovations are not judged on their inherent or scientific value, rather the opinions of peers who have already adopted the innovation. Additionally, Rogers contends that the transfer of ideas occur most frequently among individuals with like-attributes, or homophily. This concept was key in the previously mentioned STOP AIDS project.

Time, the third element, is key in the innovation-decision process, innovativeness, and the innovators' rate of adoption. The five stages of the innovation-decision process for organizations are: 1) agenda setting, 2) matching, 3) redefining/restructuring, 4) clarifying, and 5) routinizing. The first two stages, agenda setting and matching, make up the initiation phase.

The initiation phase consists of all the information gathering, conceptualization and planning for the adopter. The first stage in the initiation phase, agenda setting occurs when there is a perceived need for an innovation to solve a problem, a prioritizing of the problem, and searching the organization's environment for an innovation to solve

the problem. Next the matching of the identified problem with an innovation is planned and designed. This initiation phase leads up to the decision to adopt the innovation and must be completed before the next phase, implementation (Rogers, 2003).

The implementation phase consisted of stages three through five of the innovation decision process: redefining/restructuring, clarifying, and routinizing. During redefining/restructuring the innovation is modified to fit the organization and/or the organization is altered to fit the innovation. Next, during the clarifying phase the relationship between the organization and innovation are more clearly defined. Finally, during the routinizing stage the innovation becomes the norm of the organization and essentially loses its identity (Rogers, 2003).

Social Systems, or interrelated units, work together in problem solving to accomplish a common goal (Rogers, 2003). Members of a social system can be individuals, informal groups, organizations, and/or subsystems (Rogers, 2003). By sharing a common goal and working together, if only to solve a problem, the members are bound together. It is in this social system that diffusion occurs.

Organizational Innovativeness

The diffusion of an innovation can occur at an individual or organization level. Organizational innovativeness and the organizational diffusion is similar to the individual diffusion of innovation process, though more complex as it involves a number of individuals that make up the organization (Rogers, 2003). The individuals in the organization include supporters of the innovation and opponents of the new idea (Rogers, 2003). "Further, implementation amounts to mutual adaption in which both the innovation and the organization change in important ways" (Rogers, 2003, p. 403).

Organizational diffusion processes demonstrate characteristics consistent with individual diffusion process: adopter characteristics, an “S-shaped” *diffusion curve*, and adopter categories. Prior to the assignment of an adopter category, Rogers (2003) outlines the independent variables, or organizational characteristics, that influence innovativeness. These independent variables are individual (leader) characteristics, including attitude towards the change, and internal characteristics of the organizational structure, such as centralization, complexity, formalization, interconnectedness, organizational slack and size. System openness is the single external characteristic of the organization that will influence innovativeness. According to Rogers (2003), a consistent finding is that larger organizations are more innovative.

The "S-shaped" diffusion curve demonstrates the time element of the diffusion process and allows for the classification of adopters into categories. When adopters are plotted an "S-shaped" curve results. The "S-shaped" adopter curve rises slowly at first and then accelerates to a maximum until half of the individuals in the system have adopted the innovation (Rogers, 2003). At mid-point the curve gradually increases until all members or units adopt the innovation (Rogers, 2003).

The adopter categories, as outlined by Rogers (2003) are Innovators, Early Adopters, Early Majority, Late Majority, and Laggards. The *normal distribution* of these adopter categories follow a standard bell-shaped curve. From the mean to one standard deviation below and one standard deviation above consist of the Early Majority (mean minus one standard deviation) and Late Majority (mean plus one standard deviation). The Early Majority adopt just before the average member in the system and though they interact frequently with peers, they seldom hold positions of opinion leadership (Rogers, 2003). The Late Majority are adopting just after the average member of a system and

adoption of an innovation may be a result of increasing peer pressure and/or an economic necessity (Rogers, 2003). Laggards, or the group two standard deviations to the right of the mean, are the last in a system to adopt an innovation and have no opinion leadership (Rogers, 2003). Innovators and Early Adopters fall two standard deviations to the left of the mean. These two groups are the first to adopt innovations, with Early Adopters having the higher degree of opinion leadership compared to the rest of the adopter categories (Rogers, 2003). Dunn et al. (2004) suggest the adopter categories can provide a useful framework for the development of strategies to implement workplace lactation programs; however, this is beyond the scope of the study.

Traditionally, the DOI theory is used from a retrospective perspective with the recall of the innovation process being a major limitation of the theory. Meyer (2004) suggested that there is little known about the "why" and "how" the adoption of an innovation occurs. Workplace lactation programs can be considered an innovation for employers in the State of Texas. While it is not known how many businesses have workplace lactation programs in place, the State of Texas has recognized businesses who have met the standards and applied for a "Mother Friendly" designation since 1995. Currently, only 244 Texas businesses are registered with the Texas Department of State Health Services (TXDSHS) as "Mother Friendly" (TXDSHS, 2010). Some of the designated businesses include Motorola (Austin), Pioneer Flour Mills (San Antonio), and Baptist Children's Home (Round Rock). Using the “Mother Friendly” program as a gauge of innovativeness, the proportion of adopters to those without a workplace lactation program or a program registered with TXDSHS is low. The DOI theory could be useful in identifying independent variables, such as employer attitude and business size, that influence the presence or absence of workplace lactation programs, i.e.

organizational innovativeness. An adapted model of the DOI theory (see Figure 1) including the attitudes of small business employers and their intent to support breastfeeding mothers in the work place, can provide insight into the characteristics of small business employers and whether intent to support breastfeeding modifies such support in the workplace.

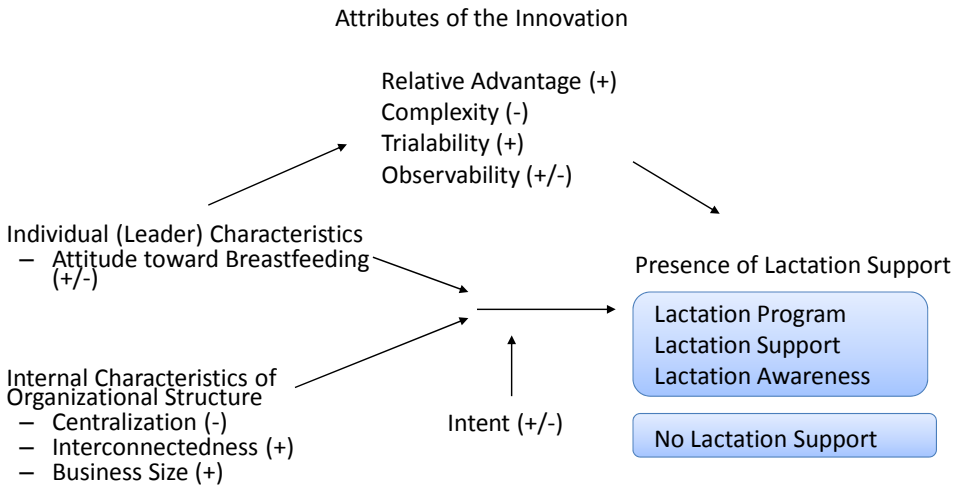

Figure 1. Conceptual Framework for Employer Attitude and Intent to Support Breastfeeding (Adapted from Rogers, 2003)

The relationships among independent variables of individual leader characteristics (attitude) and three of the internal characteristics of the organizational structure (centralization, interconnectedness, and business size), the dependent variable (presence of lactation support) can be examined. These relationships may help to explain "why" small business employers may or may not support breastfeeding in the workplace. The results of this study can provide knowledge for policy makers and breastfeeding coalitions and assist with future, targeted interventions for employers.

Individual (Leader) Characteristic – Attitude Toward Change

In Figure 1, the unidirectional arrow drawn between attitude towards change and level of lactation support represents that attitudes of the organizational leaders toward breastfeeding in the workplace and how attitudes toward breastfeeding will influence the level of lactation support. Attitude is the degree to which an individual positively or negatively values supporting breastfeeding working mothers (Rojjanasrirat, Wambach, Sousa, & Gajweski, 2010). The more positive the organizational leader is towards the practice, the more likely he/she will be to establish a lactation program or provide some sort of support.

Internal Characteristics of Organizational Structure

In Figure 1, the unidirectional arrow drawn between the internal characteristics of organizational structure and levels of lactation support illustrate that these characteristics will have positive and negative effects.

Based on Roger's (2003) definition, centralization is purported to have a negative effect on the level of support an employer will have for the breastfeeding working mothers. The more power and control that is concentrated in an

organizational leader, such as a supervisor, the less likely the organization is to be innovative by providing lactation support (Rogers, 2003). Centralization can have a negative or positive effect on lactation support in the workplace. Perhaps with more power and control in the workplace, an employer is willing to provide and can provide more support for breastfeeding. Centralization can also be the perceived behavioral control of the employer, or is the degree to which he/she has control over the internal and external constraints to support the breastfeeding working mother (Rojjanasrirat et al., 2010).

Interconnectedness can have a positive influence on lactation support. New ideas, such as providing lactation support, diffuse more readily among organizational members if there is a higher degree of interpersonal networks in the organization. Rojjanasrirat et al. (2010) describes a similar construct, subjective norms, which is defined as the perceived social pressure to support breastfeeding, and is based on expectations of others and the motivation to comply with expectations.

Size has been shown to greatly influence innovativeness. The larger the business the more likely breastfeeding mothers will be provided support. Small business may lack the space, financial resources, and/or staff to support a breastfeeding working mother or a workplace lactation program.

Intent to Support Breastfeeding in the Workplace

Figure 1 illustrates that employers' intent to support breastfeeding in the workplace can be a positive or negative moderator between the individual, leader and characteristics of the organization and the level of lactation support. An employer can have no intent to support and therefore, no programs or support

exists within the business. On the other hand the employer may have the intent to support the breastfeeding working mother and will consider how to provide support or is in the process of providing support to the working, breastfeeding mother. A third alternative is that the employer has the intent to support, but due to organizational attributes (relative advantage, complexity, trialability or observability) is unable to support breastfeeding working mothers.

Attributes that Mediate Breastfeeding Support in the Workplace

There are four organizational attributes that mediate lactation support in the workplace listed in Figure 1: relative advantage, complexity, trialability, and observability. Two of the four attributes will positively influence lactation support in the workplace. An employer is more likely to provide lactation support if they see a relative advantage, such as a economic advantage, or a return on investment. Finally, if employers could "try out" (trialability) a program so that they can observe for themselves the benefits that such a program might bring there business, then they might be more likely to permanently establish a program.

One attribute, complexity, can have a negative effect on lactation support in the work place. The more difficult an innovation is to establish and maintain, the less likely the innovation will considered and adopted (Rogers, 2003). If the employer sees the program as easy, rather than complex, to implement, they would be more likely to establish lactation support.

The fourth mediator, observability, can be positive or negative when it comes to lactation support. Employers may want to be recognized as industry leaders (Brown et al., 2001) and such a program might set them apart from their competitors; however, the program would have to be "invisible" to other

employees, meaning that the breastfeeding working mother is completing her tasks and assignments without imposing on others. Conversely, some business who do not recognize the benefits of breastfeeding for the mother, infant, and/or business may not want to be associated or known for a lactation program.

Proposed Hypothesis for Dissertation

For research question three "What is the predictive relationship among employer attitude, centralization, and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace?" the following hypotheses will be examined:

H1. Attitudes towards breastfeeding employees will predict the presence of employers' lactation support in the workplace.

H2. Greater centralization in a small business will reduce the likelihood of employer lactation support in the workplace.

H3. Greater interconnectedness of a small business will increase the likelihood of employer lactation support.

For research question four, "What is the predictive relationship between business size and the presence of lactation support in the workplace?" the following hypothesis will be examined:

H4. The size of the small business will predict the presence of employer lactation support, i.e. the larger the small business, the more likely the business will provide support for the breastfeeding working mother.

For research question five "What influence does intent to support breastfeeding in the workplace have on the presence of lactation support?" the following hypothesis will be examined:

H5. Intent will influence the presence of employer lactation support.

Additional hypotheses that will be explored include:

H6. Greater relative advantage and trialability of a lactation program will predict the presence of employer lactation support.

H7. The greater the complexity of a lactation support the less likely presence of employer lactation support will be present.

H8. Observability will influence the presence of an employer lactation support.

Definitions

- Breastfeeding is defined as “full breast milk feeding,” or the infant receives expressed breast milk in addition to breastfeeding (Labbok, 2000). This encompasses "exclusive breastfeeding" in that the infant only received breast milk from the mother or expressed breast milk (Labbok, 2000).
- Small Business is defined as one with 500 or fewer employees (U.S. Small Business Administration [USSBA], 2009).
- Employer is defined as a person or business that employs one or more people for wages or salary. For this study, “employer” will be operationalized as the point of contact, i.e. owner, manager/supervisor, human resources contact, or other self-identified position, for the small business who is knowledgeable of the company culture towards issues and trends.
- Diffusion is the process by “which an innovation is communicated through certain channels over time among members of a social system” (Rogers, 2003, pg. 5).

- Organizations are stable systems of individuals who, through a hierarchy of ranks and divisional labor, work together to achieve a common goal (Rogers, 2003).
- Innovation is defined as "an idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers, 2003, pg 36).
- Attitude is conceptually the enduring organization of an individual's belief about an object that predisposes action (Rogers, 2003). For this study, attitude will be operationalized as the degree to which an individual positively or negatively values supporting breastfeeding in the workplace (Rojjanasrirat et al., 2010).
- Relative advantage is the perception that an innovation is better than the idea it supersedes (Rogers, 2003).
- Complexity is the degree to which an innovation is perceived as difficult to use and understand (Rogers, 2003).
- Trialability is the degree that the innovation can be used on a limited basis (Rogers, 2003).
- Observability is the degree that the results of the innovation are visible to others (Rogers, 2003).
- Centralization is the power and control in a system that is concentrated to a few individuals (Rogers, 2003).
- Perceived behavioral control is the control over the internal and/or external constraints in supporting breastfeeding working mothers and the perception of the ability to support breastfeeding in the workplace (Rojjanasrirat et al., 2010).

- Interconnectedness is the degree units in a social system are linked by interpersonal networks (Rogers, 2003).
- Subjective norms are the perceived social pressure to perform a specific behavior and is based on the normative expectations of others and the motivation to comply (Rojjanasrirat et al., 2010).
- Intent to support is the employer's motivation to engage in supporting breastfeeding working mothers (Rojjanasrirat et al., 2010). For the purposes of this study, the word intent (versus intention) will be utilized, except in reference to the Employer Support for Breastfeeding Questionnaire (ESBQ).
- Levels of Lactation Support. In this study, the levels of lactation support will be collapsed into two categories, (1) support, which includes lactation programs, lactation support, and lactation awareness as defined below, and; (2) no support, as defined below.
    - Lactation Program is defined as one that provides a designated space for mothers to pump. The room has a locking door, a comfortable chair, a sink, electrical outlet, good ventilation, and a refrigerator. A breast pump may or may not be provided. Mothers are allowed break times to pump. The services of a lactation consultant are also provided prior to or during maternity leave. The consultant assists with the mother's transition back to work and may also provide education to fathers, supervisors, managers, and administrators. Some workplaces may also provide on-site or nearby day care (Bar-Yam, 1997).

- Lactation Support has the same designated, equipped space, as well as optional breast pumps, and time available for mothers to pump. A lactation consultant is not provided to support or educate (Bar-Yam, 1997).
- Lactation Awareness is defined as workplaces that make designated space, such as a spare office, but do not provide equipment or education (Bar-Yam, 1997).
- No Lactation Support is defined as no support in any form for mothers (Bar-Yam, 1997).

Assumptions

- Small business employers' attitudes will influence their intent to support breastfeeding working mothers.
- Small business employers do not have the resources to support breastfeeding in the workplace.
- A relative advantage will influence an employer to provide lactation support.

Limitations

The limitations with the study include the geographic boundaries of the sample, the focus on small businesses and the use of the internet as the survey medium. This survey is limited to small businesses in four counties in the State of Texas: Bexar, Travis, Hays, and Williamson. Consequently, the results cannot be generalized to employers with more than 500 employees. Additionally, only four Texas counties will be included in the survey. Central Texas is unique, in that some cities are perceived as more innovative and progressive towards breastfeeding when compared to other parts of the State.

An additional limitation is the medium for the survey, the internet. Internet surveys have many innate issues, including low response rates. Low response rates may be due to a lack of motivation by the employer, spam filters on email inboxes (Im & Chee, 2004) or no interest in the survey topic. It was hoped that these barriers would be mitigated by using the U.S. Small Business Administration Dynamic Small Business Search database.

Chapter Summary

This chapter has introduced the topic of this dissertation, provided significant background information, and stated the purpose, research problem, research question, definitions, assumptions, and limitations of the study. The purpose is to understand employers' attitudes and their intent to support breastfeeding in the workplace. The conceptual model, an adaptation of the DOI, was developed for this study and described in detail. The finding of this study have implications for future research and development of interventions for increasing the percent of workplace lactation programs and the proportion of mothers who breastfeed their infants for one year.

CHAPTER TWO: REVIEW OF THE LITERATURE

This review of the literature highlights breastfeeding statistics and the effects of employment on breastfeeding, followed by a review of the benefits of breastfeeding for infant and mother. Next, this review will discuss the effect of employment on the timing of breastfeeding discontinuation and the attributes of women who discontinue breastfeeding. The literature related to the constructs of the proposed theoretical model is then synthesized and presented. Current Federal and State initiatives regarding breastfeeding and workplace lactation programs will also be discussed. Finally, the levels of lactation support that create a successful environment for the breastfeeding mother and results from several studies that examined workplace lactation programs will be discussed.

Breastfeeding Statistics

In the State of Texas (CDC, 2010), 75.8% of mothers reported that they “ever breastfed.” This number of breastfeeding mothers drops drastically to 46.3% at six months and 21.8% for those mothers who reports breastfeeding continuation at 12 months. Approximately 27.6% of new mothers report exclusive breastfeeding at three months and 11% at six months (CDC, 2010).

These rates have increased since 2007 when 75.4% of mothers reported that they “ever breastfed," 37.3% at six months and 18.7% for those mothers reporting continuation at 12 months (CDC, 2007). Twenty-five percent reported exclusive breastfeeding at three months and 7.1% at six months (CDC, 2007).

While the initiation and duration of breastfeeding is trending upwards, the objective of Healthy People 2020 (81.9% reporting "ever" breastfeeding, 60.6% breastfeeding at six months, and 34.1% breastfeeding at one year) (USDHHS, 2011a) is

not being met at any phase. One of the reasons that influence a mother's decision not to breastfeed or discontinue breastfeeding early is returning to work. An objective aimed at increasing the percentage of worksite lactation programs has been proposed for Healthy People 2020, with a target that 38% of employers report providing an on-site lactation/mothers' room (USDHHS, 2011a). The implementation of worksite lactation programs will assist in prolonging the duration of breastfeeding; thereby, extending the benefits to the infant and mother.

Benefits of Breastfeeding for Infant and Mother

In 1997, the American Academy of Pediatrics (AAP) released a policy statement advising mothers and healthcare providers that newborns should be breastfed for the first year of life and exclusively for the first six months. Beyond the known benefit of maternal-child attachment, the benefit of breast milk exceeds any other form of nutrition (AAP, 2005). The AAP (2005) declared breast milk superior to any other type of infant formulas. The benefits for the infant include protection from a wide range of infectious diseases such as bacterial meningitis, bacteremia, diarrhea, respiratory tract infection, necrotizing enterocolitis, otitis media, urinary tract infection, and late-onset sepsis in preterm infants. Breastfeeding also has been shown to decrease rates of Sudden Infant Death Syndrome (SIDS), diabetes, certain cancers, obesity, and asthma. Breastfeeding has also been associated with enhanced performance on cognitive development tests (AAP, 2005).

There have been numerous studies that have shown conflicting results about the benefits of breastfeeding for an infant. In one study, Howie, Forsyth, and Ogston (1990) monitored 750 Scottish participants with monthly home visitor interviews during the first year of life and then every three months from 12 to 24 months. Gastrointestinal ($p <$

0.01) and respiratory illnesses ($p < 0.05$) were lower among the breastfed groups for at least 13 weeks and the breastfed infants were less likely than those bottle-fed from birth to be hospitalized (Howie et al., 1990). These researchers did not find an association between the type of infant feeding and otitis media. Another study conducted in Arizona on 1,246 infants found decreased wheezing associated with breastfeeding in the first four months of life (Wright, Holberg, Martinez, Morgan, & Tussig, 1989); however, breastfeeding was not found to be protective against infection in a study of 87 Californian infants (Dewey, Heining, & Nommsen-Rivers, 1995). The Dewey et al. (1995) study did find lower incidence (19% lower) and lower prolonged episodes (80% lower) of otitis media with breastfed infants compared to formula fed infants.

For the breastfeeding mother, health benefits include a decreased risk of breast and ovarian cancer, earlier return to pre-pregnancy weight, and a possible decrease risk in developing osteoporosis in the post-menopausal period (AAP, 2005). In her meta-analysis, Labbok (2001) noted that most studies found a trend for protection against breast cancer and a significant decrease in ovarian cancer risk for women who breastfed. Labbok (2001) found mixed results in regards to a reduction in development of osteoporosis and recommends carefully controlled studies to rectify the inconsistencies.

In addition to the health benefits of breastfeeding for the infant and the mother, there is the financial benefit of not having to purchase formula (Corbett-Dick & Bezek, 1997). The estimated cost savings is $1,500 in the first year, if the infant is exclusively breastfed (Consumer Reports, 2008). Interestingly, Bronner reports that low income women, who would benefit the most from this cost savings are more likely to have jobs

that make breastfeeding difficult (as cited in Khoury, Moazzem, Jarjoura, Carothers, & Hinton, 2005).

Regardless of the benefits of breastfeeding for the infant and mother, mothers may choose to discontinue, or not even initiate, breastfeeding as a result of their need to return to work. There are many reasons that factor into this decision to breastfeed, or not, and for how long.

Timing of Return to Work

Women are returning to work after childbirth at higher rates than ever due to economic demands. Han et al. (2008) reviewed data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) consisting of a sample of 10,465 children born in 2001. By three months post-partum, almost 45% of all mothers had returned to work (Han et al., 2008). By nine months postpartum this number climbed to 60% (Han et al., 2008). Thirty-seven percent of these mothers returned to full-time employment after the birth of a child (Han et al., 2008). The timing of a mothers' return to work is influenced by family structure, education, race/ethnicity, age, childbirth order, and pre-birth employment.

Family Structure - Married versus Single

Single mothers tend to return to work earlier than their married counterparts (Han et al., 2008). At nine months, co-habitating and single mothers are more likely to have returned to work than married women (Han et al., 2008). Han et al. (2008) speculated that single women and women who are living with a partner have more financial demands making it necessary to returning to work earlier than their married counterparts, as they have no second, dependable income to rely upon. Interestingly, Hofferth and Curtin (2006) found the exact opposite, mothers in two parent families

returned to work more rapidly than single mothers. They believed this was due to a spouse or partner was able to provide help with childcare.

Education

Two schools of thought exist regarding a mother's years of education and her timing of return to work. Highly educated women are more invested in returning to work quickly (Han et al., 2008; Hofferth & Curtin, 2006); conversely, they tend to be employed where maternity leave is offered as a benefit, which may delay their return to work (Han et al., 2008). Sixty percent of mothers with a high school diploma returned to work by nine months postpartum compared to 68% of women more than Bachelor's degree (Han et al., 2008). However, those mothers with a graduate degree, or more than a Bachelor's degree, were less likely than those with only a high school diploma to be working at two months postpartum probably reflecting the access to maternity leave (Han et al., 2008). Highly educated women were found to wait at least three months before returning to work after childbirth, most likely as a result of maternity leave (Han et al., 2008). This contradicts the theories that women with less than a high school education have fewer resources, such as partner support, financial reserves, or accrued paid time off, if any; therefore, necessitating an early return to work.

Education is a positive factor that increases the likelihood that both Black and White women return to work after childbirth. While education affects both races, the effect is larger for Black women (Yoon & Waite, 1994). In their study, Yoon & Waite (1994) revealed that Black women with at least some college education were 21 percentage points more likely than their counterparts with a high school education to return to work after the birth of a child.

Race/Ethnicity

Black and White mothers have the highest proportion working at nine months, with 65% of Black mothers working and 61% of White mothers (Han et al., 2008). Whereas, approximately 50% of Hispanic and Asian mothers are working at nine months (Han et al., 2008). However, these figures are consistent with the racial and ethnic differences in employment for women overall (Han et al., 2008). Hofferth and Curtin (2006) found in their study that African Americans returned to work more rapidly after a birth compared to White mothers. Similarly, Dabritz, Hinton & Babb (2009) indicated that non-White mothers were twice as likely to return to work or school full-time than White mothers.

Age

Han et al. (2008) could not find a clear association between age and timing of return to work. Similar to years of schooling, older mothers' may have enhanced financial resources, that enable them to remain out of the workforce longer, older mothers also tend to have more education than their younger counterparts and personal incentives, such as seniority at work or educational investment, to return to work.

Childbirth Order

The more children a woman gives birth too, the less likely she is to return to work (Han et al., 2008). Rates of returning to work are considerably higher after the first and second child compared to after a third and later births. Sixty-four percent of mothers with a first-born and 60% of mothers with a second-born returned to work by nine months (Han et al., 2008). Only 50% of women with a third-born returned to work by nine months (Han et al., 2008).

Pre-birth Employment

Previous work history is another factor that affects the timing of a mother's return to work. In a study sample drawn from the 1997 Child Development Supplement (CDS) to the Panel Study of Income Dynamics (PSID), Hofferth and Curtin (2006) reported that mothers who worked during pregnancy returned to work more quickly after the births of their children. In the sample of 1,369, 50% returned to work within three months of birth, 61% within six months (Hofferth & Curtin, 2006). Han et al. (2007), in their study on the timing of mothers' employment after childbirth, found previous work history to be the strongest factor in timing of return to work. Two-thirds of women who were employed prior to giving birth returned to work by three months and 87% returned by nine months (Han et al., 2007).

Employers and Policy

Employers influence the timing of a mother's return to work. First, some employers may not offer maternity leave, whether paid or unpaid. The Family Medical Leave Act (FMLA) of 1995 does not require employers to offer paid leave. If the business does participate in the FMLA, it may require that the mother exhaust all accrued leave, such as vacation and sick leave, as part of the FMLA. This constrains the availability of time off after returning to work, as a mother may only be able to take off for the amount of paid time she has accrued and must return to work when the paid time off is exhausted. Basically, "Having no wage replacement [also] dictates how long a person might take off" (Pyle & Pelletier, 2003, pg 365). Additionally, a mother on FMLA is not entitled to accrue sick and vacation benefits during leave. Many mothers do not have the option of unpaid leave and these are usually mothers of lower income and who are disproportionately women of color (USDHHS, 2011b).

The Family Medical Leave Act (FMLA, 1995) has also influenced women returning to work. Prior to the passage of the FMLA, 33% of working mothers returned by the third month after birth and 50% returned by the sixth month. After the passage of the FMLA this rose to 50% in three months and 61% in six months (Hofferth & Curtin, 2006). It is also interesting to note that these mothers also tended to return to the same job (Hofferth & Curtin, 2006).

Economic demands, accrued leave, and previous employment are a few of the factors that influence a mothers' timing of her return to work. It is the return to work that will influence the duration of breastfeeding.

Breastfeeding and Employment

Returning to work is not a strong predictor of the mother's intent to breastfeed, but rather of the duration of breastfeeding (Kimbro, 2006; Ortiz et al., 2004; Ryan et al., 2006). Though mothers working part-time or not working are more likely to initiate breastfeeding than those working full-time (Fein & Roe, 1998; Ryan et al., 2006). Studies have indicated that working mothers will continue to breastfeed for shorter periods of time, as compared to mothers who are not working, or who are employed part-time (Dunn et al., 2004; Kimbro, 2006; Libbus & Bullock, 2004; McKinley & Hyde, 2004; Ryan et al., 2006; Witters-Green, 2003). The mother who is not employed is two times more likely to continue breastfeeding than mothers who worked full-time (Ryan et al., 2006). The Ryan et al. (2006) study found that employment status had a small, but significant impact on initiation of breastfeeding. Mothers who were not employed were 1.28 times more likely to initiate breastfeeding than those mothers who were employed full-time (OR 1.28 [95% CI 12.5, 1.31]). The odds for continuous breastfeeding for non-working mothers at six months were greater than two times that of mothers working full-time (OR

2.08 [95% CI 2.03, 2.13). The odds of a part-time working mother to continue breastfeeding compared to a full-time employed mother was greater as well (OR 1.50 [95% CI 1.45, 1.54). This significant effect translated to only 26.1% of mothers surveyed and who were working full-time were breastfeeding at six months, while 36.6% of mothers working part-time and 35% of non-working mothers continued breastfeeding.

Even the type of employment may factor into the mothers' decision to breastfeed, exclusively breastfeed, and when to wean (Kimbro, 2006; Meek, 2001; Ryan et al., 2006). Time and the lack of schedule flexibility is an additional barrier for continued breastfeeding and centers on employee status and job duties (Brown et al., 2001). Salaried employees are thought to have an easier time combining breastfeeding with full-time employment than hourly employees (Brown et al., 2001; Ryan et al., 2006); however, most women have hourly, minimum wage jobs, such as sales (33.1%) and service occupations (20.6%) (Department of Labor [DOL], 2008), which do not offer the flexibility to facilitate continued breastfeeding. Having a managerial position was protective for continued breastfeeding (HR 0.60 [95%, CI 0.39,-0.82]), while having inflexible job roles increased the probability of cessation (HR 1.47 [95% CI 1.00-2.16]) (Guendelman, Kosa, Pearl, Graham, Goodman, & Kharrazi, 2009).

Women in manual or administrative positions quit breastfeeding earlier (Kimbro, 2006). In her study, Kimbro (2006) found that mothers in professional jobs do not differ significantly from stay-at-home mothers when it comes to the duration of breastfeeding (OR 1.01 [95% CI 0.77, 1.33]). This may be due, in part, to access to a private, locked space such as an office to use for pumping, and a flexible schedule. However, women in manual or administrative positions had a 34% and 35%, respectively, greater odds of quitting breastfeeding when compared to stay at home mothers (OR 1.34 [95% CI 1.12,

1.60]; OR 1.35 [95% CI 1.04, 1.75]). Conversely and unexpectedly, Kimbro (2006) found that women in service jobs did not significantly differ in their breastfeeding duration, when compared to stay at home mothers (OR 1.06 [95% CI 0.85, 1.31]). Kimbro's only rationale, while weak, was that women in these service-type positions have some flexibility with their schedules.

Previous work history may be a contributing factor to the timeliness of a woman's return to the workplace and breastfeeding duration. Only one study was found that examined this relationship, Fein and Roe (1998) found no significant link between pervious work history and the duration of breastfeeding.

Studies have shown that part-time employment does not decrease the duration of breastfeeding in relation to no employment; however, full-time employment decreases breastfeeding duration significantly. The effect of work status on the duration of breastfeeding has been thoroughly documented. Witters-Green (2003), reports that many women do not even initiate breastfeeding in anticipation of returning to work.

A study conducted by Fein and Roe (1998) examined several employment variations on the initiation and duration of breastfeeding. In their sample of 1,488 mothers, 76% initiated breastfeeding. Mothers who planned to return to work had an adjusted initiation rate of 14.3 percentage points compared to those mothers who did not expect to return to work (67.2 versus 81.5; $p<.05$) (Fein & Roe, 1998). Full-time employment at three months postpartum has a negative effect (-8.54, p.001) on the duration of breastfeeding, relative to mothers who were not working (Fein & Roe, 1998). Mothers working full-time breastfed on average 16.5 weeks, 8.6 weeks less than non-working mothers ($p < .05$) (Fein & Roe, 1998). Non-working women were found to breastfeed for 25.1 weeks, women working one to 19 hours were found to breastfeed on

average for 24.4 weeks and women working 20 to 34 hours per week breastfed on average for 22.5 weeks (Fein & Roe, 1998).

Similar results were also found by Kimbro (2006) who studied work and breastfeeding initiation and duration by low-income women (*N* = 4,331). Kimbro's findings demonstrated that the timing of quitting breastfeeding and a mother's return to work are strongly related. As the date of a mother's impending return to work approaches, the odds that she will quit breastfeeding increases. At two months prior to return to work, a mother has 25% greater odds of quitting than a mother who is not returning to work (OR 1.25 [95% CI 0.98, 1.60]). This figure increases to 34% at one month prior (OR 1.34 [95% CI 1.05, 1.75]) and during the month a mother returns to work she is more than two times greater likely to quit breastfeeding (OR 2.18 [95% CI 1.74, 2.74]). Kimbo suggests that because of this link, mothers may feel that combining breastfeeding and employment is difficult or unappealing.

In a more recent study, a dose-response effect was found. A study conducted by Racine, Frick, Gutherie, and Strobino (2008) using a sample of 1,322 low-income working and non-working breastfeeding mothers found that 38.9% (*n* = 514) discontinued breastfeeding by one-month postpartum and by six months postpartum 82.6% (*n* = 1092) had stopped breastfeeding. By 12 months, 97.2% (*n* = 1285) of women were not breastfeeding. Racine et al. (2008) defined certain incentives to continue breastfeeding, such as infant and maternal health, cost savings, time saved; and defined certain disincentives to continue breastfeeding, such as stress and returning to work or school. Mothers who worked 20 hours or less a week had a 29% greater risk (HR = 1.29; 1.04, 1.60) of discontinuing breastfeeding and those mothers who worked 21-40 hours per week had a 47% greater risk (HR = 1.47; 1.26, 1.71) of discontinuing

breastfeeding (Racine et al., 2008). Mothers who worked over 40 hours per week, a 52% increase (HR = 1.52; 1.11, 2.08) (Racine et al., 2008).

In a qualitative study on maternal perspectives of returning to work after having a baby, participants returned to work on average that ten weeks postpartum (Nichols & Roux, 2004). Seventy-four employed, married women responded to open-ended questions about their return to work during the first months after giving birth. Returning to work in the postpartum period was perceived as a negative experience by the women in the study (Nichols & Roux, 2004) It is worthy to note that Nichols and Roux found that mothers who chose to breastfeed (72%) weaned their infants on average at ten weeks.

Whether or not a mother has paid or unpaid time off, i.e. FMLA, following the birth of child will also influence the duration of breastfeeding. The Family Medical Leave Act (1995) does not contain any provisions for the breastfeeding mother, nor does the provision of 12 weeks allow enough time to establish breastfeeding and limits bonding time with the infant (Pyle & Pelletier, 2003). Fein and Roe's (1998) study supports this finding; mothers with any amount of available leave from work have a shorter duration of breastfeeding than non-working mothers. The assumption is mothers quit breastfeeding as a result of, in anticipation of, and planning for their return to work. Guendelman et al. (2009) interviewed 1,214 women who worked 20 or more hours a week during their prenatal period. Of the women who returned to work, 68% took an average of 10.3 weeks (SD 4.8 weeks) of maternity leave (Guendelman et al., 2009). Twenty-three percent of these women stopped breastfeeding during the month before returning to work, 29% during the first month after returning to work, and another 20% during the second month after returning to work (Guendelman et al., 2009). Return to work was

found to be the strongest predictor of failure to establish breastfeeding. Returning work within six weeks of delivery was found to increase the chance of failure to establish breastfeeding by greater than four times (OR 4.49 [95% CI 2.04, 9.90]), and returning to work between six to 12 week increased the chance of failure to establish breastfeeding by more than two times (OR 2.42 [95% CI 1.28, 4.56]) (Guendelman et al., 2009).

Besides the employment status and other factors that may determine duration of breastfeeding, the attributes of the mother may determine the initiation and duration of breastfeeding.

Attributes of Women Who Discontinue Breastfeeding

Multiple studies have explored the attributes of women who discontinue breastfeeding earlier than the recommended duration of 12 months. Most studies have revealed similar characteristics of these women.

Ryan et al. (2006) assessed the effect of employment status on breastfeeding in the United States. A national sample (*N* = 228,000) from the Ross Laboratories Mothers Survey (RMS) from 2003, compared the prevalence of the initiation and duration of breastfeeding six months after delivery of mothers who were employed full-time, part-time, or not employed. The amount of hours worked was not a consideration in this study. Breastfeeding (Yes or No) was the dependent variable, while the independent variables were maternal employment (full-time, part-time, not employed); maternal age (less than 30 or ≥ 30); maternal education (college or no college); Women, Infants, Children, (WIC) program participation; parity (primiparous or multiparious); race (White, Black, or Hispanic); Hispanic origin (Hispanic or non-Hispanic), and; birth weight of infant (normal or underweight defined as less than 2500 grams).

Breastfeeding *initiation* was lowest among younger (less than 20 years of age), Black, grade school education, participating in a WIC program, residing in the South Atlantic portion of the United States, and had given birth to a low birth-weight infant (Ryan et al., 2006). Ryan et al. (2006) reports that the lowest incidence of breastfeeding *at six months* was among those who were Black, less than 20 years of age, less educated, those enrolled in a Women, Infants, and Children (WIC) program, and living in the South Atlantic portion of the United States.

Race/ethnicity also has a significant effect on breastfeeding duration. Black mothers are less likely to continue breastfeeding compared to White or Hispanic mothers regardless of employment status (Ryan et al., 2006). One factor that effects breastfeeding duration is the early return to work by non-White mothers, further disadvantaging this group when it comes to breastfeeding duration (Dabritz et al., 2009).

In regard to the combination of breastfeeding and full-time employment, the more highly educated the woman, the more likely she is to have flexibility and control over work schedules, and is able to schedule break time as needed to express milk (Dabritz et al., 2008). Ryan et al. (2006) reports that a mothers' education, colleges versus no college, is a significant predictor of continued breastfeeding at six months (OR 2.07 [95% CI 2.02, 2.11]). Dabritz et al. (2008) suggests that women with lower educational attainment are less likely to have access to a lactation room. This study revealed that only 66% of the women surveyed and who had a high school education or less had access to a designated space, compared to ≥78% of mothers with some college or more having access to a dedicated space for pumping.

Participation in a WIC program impacted full-time, part-time, and non-working mothers significantly (OR 2.15 [95% CI 2.10, 2.20]); more than twice as many non-WIC

participants were breastfeeding at six months versus their WIC participating counterparts (Ryan et al., 2006). Ryan et al. (2006) also found that in addition to occupation, socioeconomic status will influence continued breastfeeding after the mother's return to work.

Organizational Innovativeness- Breastfeeding in the Workplace

Employer Knowledge and Attitudes Toward Breastfeeding

Breastfeeding is considered the best nutrition for infants, but ironically this "normal" feeding is not the norm in the United States (Zinn, 2000). Studies have revealed differing degrees of knowledge regarding the benefits of breastfeeding held by employers. Additionally, there are varying employer attitudes and employer practices towards the breastfeeding mother. Employers range from little knowledge about the physical and psychological benefits of breastfeeding (Witters-Green, 2003) to understanding the benefits for the infant, mother, and business (Brown et al., 2001).

Witters-Green (2003) interviewed 14 employers about their policies, attitudes, and beliefs regarding mothers who have returned to work after giving birth who wish to continue breastfeeding. The owners/operators or managers of the following type of businesses participated in the interviews: a large, multipurpose retail store, a grocery store, a house cleaning service, a fast food restaurant, a sit-down family restaurant, a hair salon, a print shop, a security patrol service, a school district kitchen/custodial service, a hospital, a dentist's office, an assisted-living facility, a large insurance company, and a manufacturing plant (Witters-Green, 2003). Nine of the employers were female and five were male. Witters-Green (2003) found that four of the employers knew of no benefits of breastfeeding or benefits of breastfeeding of a child; one did not have an opinion about the benefits of breastfeeding. None of the 14 employers could identify

any benefits to the employer or place of employment that result from a mother who continues to breastfeed upon return to work (Witters-Green, 2003). As a result, none had a workplace lactation policies or a dedicated place to pump breast milk (Witters-Green, 2003).

Brown et al. (2001) conducted a similar study. Two focus groups were conducted, one for large business employers (defined as those with greater than 150 employees) and the other with small business employers (defined as those with less than 150 employees), and attended by human resources personnel responsible for maternity issues. Overall, participants knew of the benefits of breastfeeding for the mother and infant, citing as optimal infant nutrition, bonding between mother and infant, ease of breastfeeding, and peace of mind as key reasons to breastfeed. Employers' attitudes toward breastfeeding in the workplace were mixed and they had not placed a high priority on supporting breastfeeding. None of the companies that participated in the focus groups had breastfeeding support policies and have only accommodated employees on an "as-needed" basis (Brown et al., 2001). However, one company has begun installing lactation rooms in all their new building. One important gap or weakness in this study is the responses by the two focus groups we not differentiated, i.e. responses by the large business employer focus group versus the responses by the small business employer group. Regarding the benefits to employers, multiple studies reveal that employers, for the most part, are not knowledgeable (Bridges, Frank, & Curtin, 1997; Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002; Witters-Green, 2003).

Bridges et al. (1997) assessed the attitudes about breastfeeding from 69 employers in a small rural community. Forty-one percent of the employers believed that

formula-fed infants are as healthy as infants who receive breast milk, indicating a lack of knowledge about the benefits of breastfeeding. Overall, there was weak, but positive support for breastfeeding in the workplace by employers who participated in this survey.

Dunn et al. (2004) assessed the breastfeeding practices among 157 businesses in Colorado. Her sample included 44 small businesses (defined as fewer than 50 employees), 69% medium-size businesses (defined between 50 and 499 employees) and 44 large businesses (defined as 500 or more employees) (Dunn et al., 2004). A majority of the participants were not aware of the benefits of breastfeeding to the employer (Dunn et al., 2004). A regression analysis revealed a significant relationship between corporate attitudes toward maternal employment and breastfeeding and indicated that attitudes may be predictive of availability of benefits and services conducive to breastfeeding, [F (1, 119) = 81.1, p =.0001, R^2 = 0.40] (Dunn et al., 2004). Dunn et al. (2004) also solicited comments and suggestions regarding the accommodation of the needs of working, breastfeeding mothers and five themes emerged from the responses: breastfeeding as a non-issue, difficulty of supporting breastfeeding within a particular work environment, breastfeeding (or working while breastfeeding) as a matter of personal choice and not a matter of employer responsibility, willingness to accommodate breastfeeding employees, and support for breastfeeding (Dunn et al., 2004).

These results are similar to those reported by Libbus and Bullock (2002) who conducted a survey of 156 employers during three civic group meetings composed largely of employers or personnel managers from service, manufacturing, and educational sectors; 85 complete questionnaires were used for the data analysis. One weakness in this study is the size of the employer was not obtained. Data were

segmented by sex of the respondent, marital status, race/ethnicity, education, and personal experience with breastfeeding. Results indicated that while 71% of employers indicated they would support the breastfeeding mother, little value was seen for the business itself.

Centralization

A gap exists in the literature regarding centralization, or concentration of power and control, and breastfeeding support. No study could be found that examines the organizational structure and the concentration of power and/or control. One challenge is convincing leadership that the support of breastfeeding is a workplace issue (Heinig, 2007). Appropriate involvement of senior- and midlevel administration is critical at different stages of the planning and implementation phases and necessary for change. For example, support from the senior-level staff that is needed to bring about change, while midlevel and staff are important at the implementation phase (Heinig, 2007). With no midlevel administrative personnel, change will be difficult. "Top leaders are poorly positioned to identify operational-level problems or to suggest relevant innovations to meet these needs" (Rogers, 2003, pg. 412). Empirical data are needed to determine if centralization influences workplace lactation support.

Interconnectedness

Rogers (2003) believes ideas spread more easily when members of an organization have a higher degree of network interconnectedness or the interpersonal links in a social system. Bridges et al. (1997) reported that employers who knew of other businesses (30.4%) that supported breastfeeding working mothers reported significantly higher levels of breastfeeding support (M = 35.2 ± 7.2; 14-50) compared to those surveyed that did not know of any other business (69.6%) who employed breastfeeding

women (M = 30.9 ± 6.7; 14-50), demonstrating the Ryan and Gross (1943) notion that diffusion is a social process.

Size of Employer

To date, only one study can be found that describes the relationship of employer size to employer support of breastfeeding. Data from Dunn et al. (2004) indicated that there are significant differences in work-site breastfeeding support between large, medium, and small businesses (size criteria previously described). When asked about the availability of benefits and services, seven out of 12 services that help support breastfeeding in the workplace demonstrated significant differences by business size. For example, 88.1% of large business provide flextime, job sharing, or part-time employment options, compared to 59% of medium-sized businesses and 75% of small businesses (X^2 (2) = 10.6, p < .01) (Dunn et al., 2004). Another interesting difference is breaks available for collecting breast milk or to breastfeed a mother; 78.6% of large business, 49.2% of medium-sized businesses, and 63.9% of small businesses make this support available (X^2 (2) = 9.2, p < .05) (Dunn et al., 2004). Other significant differences with reported availability of benefits and services supportive of breastfeeding included: breastfeeding educational materials (X^2 (2) = 16.4, p < .01), providing electric breast pumps (X^2 (2) = 15.5, p < .01) and, having a breastfeeding counselor or lactation consultant on staff (X^2 (2) = 7.0, p < .05) (Dunn et al., 2004).

Intent to Support Breastfeeding

Intent is often assessed concurrently with attitudes toward breastfeeding, but can essentially be narrowed down to one question, "Do you support or intend to support the breastfeeding working mother?" Bridges et al. (1997) was most thorough in their assessment. They compared levels of support among three groups, participants who

would establish an area to breastfeed in the workplace, those who would not establish such an area, and those employers who were uncertain (Bridges et al., 1997). The groups were found to be significantly (p<0.001) different on level of support. Only 17% of the employers indicated that they would support a breastfeeding working mother in their workplace. More recent research, however, reported that 71% (Dunn et al., 2004; Libbus & Bullock, 2002) would support the breastfeeding mother in the workplace.

Relative Advantage

Employer support of breastfeeding holds many advantages over providing no support at all. The employer also experiences indirect benefits from the breastfeeding worker. The benefits far outweigh the costs when it comes to providing workplace provisions for the breastfeeding mother. Costs, such as time and space, are negligible when compared to the employer advantages (Ball & Bennett, 2001).

Decreased absenteeism and turnover.

Breastfeeding has been associated with a decrease in parental employee absenteeism (AAP, 2005; Brown et al., 2001; Dunn, et al., 2004; Libbus & Bullock, 2002; Meek, 2001; Witters-Green, 2003). Few studies have quantified the actual dollar amounts that employers may realize with decreased absenteeism; however, the United States Breastfeeding Committee (2010) reports that absenteeism can cost the employer approximately $775 per employee or 15% of a company's base payroll. According to Ball and Bennett (2001), one health insurance company estimated that three days of sick leave per breastfed infant were saved in the first year of it's lactation program. Also it is costly to replace an employee. Companies with lactation programs have an 80-90% retention rate of childbearing employees thus reducing costs associated with high turnover rates (United States Breastfeeding Committee, 2010).

Two studies assessed employers knowledge and attitudes toward workplace lactation and the results indicated that employers do not know about the benefit of decrease absenteeism that a lactation program may hold. In their study Bridges et al. (1997), found that 50% of the survey participants disagreed that allowing women to breastfeed in the workplace would a result in a decrease in absenteeism. The second study found that only 25% believed in that there would be a decrease in absenteeism (Libbus & Bullock, 2002). Of this 25%, only 15% of the male employers and 36% of the female employers realized this benefit of decreased absenteeism. Only 23.5% of the participants in a more recent study believed that there would be a decrease in absenteeism by allowing breastfeeding in the workplace (Dunn et al., 2004).

Employers' knowledge of the benefit of decreased turnover rates as a result of supporting the breastfeeding mother is also low. Only 17.5% in the Dunn et al. (2004) study and 22% in the Libbus and Bullock (2002) study thought that allowing women to breastfeed in the workplace would decrease employee turnover rate. However, almost twice as many women (26%) as men (12%) recognized this benefit (Libbus & Bullock, 2002). The earliest study found that assessed employers attitudes about breastfeeding revealed that only 23% thought they would see a decrease in the turnover rate by allowing women to breastfeed in the workplace (Bridges et al., 1997).

Cost savings.

The monetary cost savings of an employer-sponsored lactation program has been quantified. Ball and Wright (1999) looked at the frequency of care utilization for three common illnesses (lower respiratory tract illness, otitis media, and gastrointestinal illness) in the first year of life and assessed them in relation to the duration of exclusive breastfeeding in 1588 infants. After adjusting for cofounders, researchers found 2033

excess office visits, 212 days of excess hospital days, and 609 excess prescriptions per 1,000 infants. The estimated cost savings for managed care health system for each infant that is exclusively breastfed for three months is between $331 and $471 (Ball & Wright, 1999). These savings can then be passed on to the employer in the form of lower premiums. Ball and Bennett (2001) reported that one health insurance company saved approximately $1,435 in medical claims, totaling over $100,000, per breastfed infant during the first year of its' lactation program. Additionally, for every $1 invested to support breastfeeding, an employer can realize a cost savings of $3 (United States Breastfeeding Committee, 2009).

Employee wellness.

Employers who support breastfeeding in the workplace contribute to a mother's peace of mind, decreasing her stress level and thus increasing productivity and decreasing absenteeism (Brown et al., 2001). Lower stress levels also contribute to a mother remaining at her job and not being forced to choose between employment or continued breastfeeding.

Recruitment and industry leadership.

Furthermore, the breastfeeding workplace has been identified as a recruitment tool (Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002) and identifies the business as being an industry leader (Brown et al., 2001). However, many employers do not believe this is a benefit to their business. For example, only 18% in the Libbus and Bullock (2002) study considered that by allowing breastfeeding in the workplace there would be a positive effect on recruitment. Likewise, only 35% of the employers in the Dunn et al. (2004) study had the same impression.

Complexity

If the employer has a perception that the implementation of a lactation program is going to be expensive or difficult, the chances for a successful lactation program are low. Complexities can also be viewed as barriers or concerns to implementing lactation support by the employer. Consistent employer perceived barriers to breastfeeding in the workplace are space, time and decreased productivity, poor employee relations, and concerns about financial or liability issues (Bridges et al., 1997; Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002; Witters-Green, 2003). There is a perceived lack of need of breastfeeding support services among employers, which creates a barrier for the mother employed full-time who wishes to breastfeed, influencing initiation and duration (Dunn et al., 2004).

Women who attempt to work and breastfeed are often relegated to bathrooms stalls, stairwells, or vehicles. Some employers find the investment in a designated room costly and believe bathrooms are acceptable lactation facilities (Brown et al., 2001). Employers interviewed in Brown et al. (2001) worried that the monetary costs of installing a lactation room would be in excess of thousands of dollars. Fifty percent of the employers in the Witters-Green (2003) study indicated that there was only a bathroom or bathroom stall where a mother could express milk privately. Private and appropriate space to pump is the most common barrier for the breastfeeding mother (Mills, 2009). Lack of appropriate or insufficient space and lack of shift coverage make it less likely that the breastfeeding mother will continue to breastfeed after returning to the workforce (Corbett-Dick & Bezek, 1997). In the studies reviewed, employers rarely provided space for the breastfeeding mother.

Dabritz et al. (2008) examined the workplace and school environments in California. Interestingly, California enacted legislation in 2002 that called for businesses to provide a designated space, not including a toilet stall, for pumping breast milk, as well as flexible schedules. A total of 399 mothers participated in a 67-item survey that included questions about work and school-related environments. This study found that 22% of mothers who return to work and 17% who return to school were not provided a lactation room (Dabritz et al., 2008), even when required by law.

Employers are mixed about the effect of breastfeeding in the workplace and productivity. Thirty percent of employers believed that productivity would be effected with workplace lactation (Bridges et al., 1997). Libbus and Bullock (2002) found that only 15% of employers, 27% male and 10% female, felt that by allowing mothers to breastfeed their infants in the workplace productivity will be compromised. Dunn et al. (2004) found that 45.9% felt that this practice would not interfere with productivity. One qualitative study had a small business employer share negative experiences with productivity and breastfeeding employee, calling "something like this," (breastfeeding or expressing milk) a major disruption in the workflow (Brown et al., 2001, pg. 43). Witters-Green (2003) reported that the employers surveyed did not find a problem with a mother expressing milk, as long as the customer's needs were met first, the employee's work was completed, or the job was covered while the employee was away.

Breastfeeding mothers also have to contend with the attitudes of other employees and this is a concern for employers. Poor employee relations are seen as a barrier to providing breastfeeding support in the workplace (Brown et al., 2001; Witters-Green, 2003; Zinn, 2000). Employers cited feelings and behaviors such as resentment, jealousy, and harassment may be experienced by co-workers of the breastfeeding

working mother (Witters-Green, 2003). Co-workers want to see that there is equal work for equal pay and that workloads will not increase to meet the needs of the breastfeeding mother (Zinn, 2000). Research has contradicted this perceived issue. One study looked at the time and frequency of breast milk expression in the workplace and revealed that mothers who worked in an environment that was supportive of breastfeeding spent equal amount of time on breaks as other employed women (Slusser, Lang, Dickson, Hawkes, & Cohen, 2004). Essentially breaks for expressing milk are analogous to other breaks for eating, smoking, restroom (United States Breastfeeding Committee, 2010). Of the 61 mothers surveyed at six months, 82% were spending less than one hour expressing breast milk at work. By six months, this number rose to 95% (Slusser et al., 2004). However, it is necessary that the breastfeeding mother have flexibility with her breaks so that pumping can mimic the infant breastfeeding schedule. Suyes, Abrahams, and Labbok (2008) conducted a survey among 407 corporate employees to assess attitudes towards workplace breastfeeding and/or breast milk expression among employees of a large corporation that provides many on-site services for its' breastfeeding mothers. The researchers found that lactation accommodations did not have negative consequences for other employees and that an environment supportive of the breastfeeding mother did not jeopardize positive attitudes towards breastfeeding (M = 35.1; 95% CI; 34.6, 35.6) (Suyes et al., 2008).

Only one study indicated that an additional concern for employers was financial and liability issues on the part of the employer. Concerns from a liability standpoint emerged, should the pumped breast milk be tampered with and harm a child (Brown et al., 2001).

Trialability

No study could be found that directly examined workplace lactation support on a trial basis. However, many employers inadvertently, "try out" some form of support. For example, the participants in the Brown et al. (2001) study indicated that they would support a breastfeeding working mother on an "as needed" basis. It is this approach that could be considered a trialability, serving as the basis for future, more permanent support for the breastfeeding working mother.

Observability

Employers were mixed when it came to the advertising of a workplace lactation program for their business. Across industries there is a common desire to be "the first" with an innovation (Brown et al., 2001). However, the employers in one study indicated that they would not approach the subject with potential employees.

Three studies assessed whether or not employer felt that by allowing mothers to breastfeed in the workplace a negative image would result. Results ranged from 4% to 23% of employers believing that a negative public image would ensue should they allow a mother to breastfeed in the workplace (Bridges et al., 1997; Dunn et al., 2004; Libbus & Bullock, 2002).

Overall, employers feel that breastfeeding is a personal choice and not the responsibility of the employer (Dunn et al., 2004). Few employers believe that a workplace should be changed to allow women to breastfeed (Bridges et al., 1997; Libbus & Bullock, 2002).

Legislation and Policy

A Historical Synopsis

A search of legislation, policy, and initiatives revealed many avenues for breastfeeding promotion. Most recently has been the controversial health care legislation, *Health Care Reform: the Patient Protection and Affordable Care Act* (H.R. Res. 3590, 2010). Breastfeeding working mothers are now suppose to be provided with a reasonable break time for expressing milk as part of President Obama's healthcare reform that became effective earlier in 2010. Specifically, Section 4207 amends Section 7 of the Fair Labor Standards Act on 1938 and mandates that employers with greater than 50 employees are now to provide:

- a reasonable break time for an employee to express breast milk for her nursing child for one year after the child's birth each time such employee has need to express the milk, and
- a place, other than a bathroom, that is shielded from view and free from intrusion from co-workers and the public, which may be used by an employee to express breast milk.

However, employers with less than 50 employees shall not be subject to the requirements if such would impose an undue hardship by causing significant difficulty or expense when considered in relation to the business size, financial resources, nature, or structure of the employer's business. Additionally, employers are not required to compensate employees for break times.

The USDHHS recently released *The Surgeon General's Call to Action to Support Breastfeeding*, which outlines the responsibilities of clinicians, employers, communities, researchers, and government leaders and urges "all to take of a commitment to enable

mothers to meet their personal goals for breastfeeding" (USDHHS, 2011b, pg. v). This documents outlines actions and implementation strategies that can improve breastfeeding rates, one area is amongst employment. While the majority of actions and implementation strategies can only be executed by Federal and State governments or public health entities, two strategies are targeted to employers: 1) promote comprehensive, high-quality lactation support programs as part of a basic employee benefits package, and 2) identify and promote innovative programs that allow mothers to directly breastfeed their babies after they return to work (USDHHS, 2011b).

Congresswoman Carolyn Maloney (D-New York) has been one of the biggest proponents of breastfeeding at a Federal level. In 1998, Congresswoman Maloney passed legislation that would allow the Women, Infants and Children (WIC) program to use funds to provide educational materials on breastfeeding and allow state agencies to use additional WIC funds to purchase breast pumps. Second, as part of the Fiscal Year (FY) 2000 budget (1999), Congresswoman Maloney introduced in the 106th Congress the *Right to Breastfeed Act* (H.R. 1848, 1999), which fought to ensure a woman's right to breastfeed on any portion of Federal property where the woman and her child are otherwise authorized to be. Her next step occurred in 1999, when H.R. 3372, *Safe and Effective Breast Pumps Act* was introduced in the 106th Congress and remains in the Subcommittee on Health and Environment (H.R. 3372, 1999). This bill would require performance standards for breast pumps and facilitate their regulation under the Federal Food, Drug, and Cosmetic Act.

The *Breastfeeding Promotion Act* (H.R. 285) was reintroduced in the 110th Congress (H.R. 2236) and remains pending in the United States House of Representatives. Congresswoman Maloney first introduced H.R. 285 in 2001 [107th

Congress] and re-introduced the legislation again in 2003 as H.R. 2790 [108th Congress] and 2005 as H.R. 2122 [109th Congress]. The current version of the bill seeks to amend the Civil Rights Act of 1964 and to protect breastfeeding women from being fired or discriminated against in the workplace, to provide tax incentives for businesses that establish private lactation areas in the workplace, to provide for performance standards for breast pumps, and to allow for breastfeeding equipment and consultation to be a tax deduction for families.

As an adjunct to legislation, the Federal government seeks to improve the rates of breastfed infants through other initiatives. Healthy People is a set of initiatives from the U.S. Department of Health and Human Services. This comprehensive list of national health objectives aims to identify the most significant preventable threats to health and to establish national goals to reduce these threats. Among the twenty-eight focus areas is Maternal, Infant, and Child Health (objective 16-19.) which aims to increase the proportion of mothers who breastfeed their babies USDHHS, 2000a). Though this measure is not specific to mothers who are trying to combine full-time employment with breastfeeding, it does reflect the importance the Federal government has placed on breastfeeding and suggests that even alone (not in combination with full-time employment), breastfeeding is a challenging task for new mothers. The target of Healthy People 2010 is 75% of mother to breastfeed in the early postpartum period, 50% at six months, and 25% at one year (USDHHS, 2000a). The 1998 U.S. baseline measure for the number of mothers who breastfed their infants was 64% in the early postpartum period, 29% at six month, and 16% at one year; all well below the 2010 target (USDHHS, 2000a).

New to the Healthy People 2020 objectives is Maternal, Infant, and Child Health (MICH) goal HP2020-22, “Increase the percentage of employers who have worksite lactation programs” (USDHHS, 2011a). The target is that 38% of employers report providing an on-site lactation/mother's room.

In addition to Healthy People 2010 and 2020, the U.S. Department of Health and Human Services issued the *HHS Blueprint for Action on Breastfeeding* (2000b). This blueprint discusses the benefits and cautions of breastfeeding; facilitation and support of breastfeeding; major activities, and the blueprint for actions. When discussing the facilitation and support of breastfeeding, the workplace is highlighted. It is here that the USDHHS suggests that the workplace should enable the combination of work and breastfeeding, for as long as the mother and baby desire. A workplace program should include prenatal lactation; corporate policies that provide information for all employees on the benefits of breastfeeding and services available; co-worker education; adequate breaks, flexible work hours, and job-sharing or part-time work; private space for expressing milk; access to hospital-grade breast pumps or subsidization/purchase of individual breast pumps; refrigerators for milk storage; access to a lactation professional; coordination with on-site or near-site child care; and, support groups (USDHHS, 2000b).

Recently USDHHS and the Health Resources and Service Administration (HRSA) released *The Business Case for Breastfeeding* (2008). This program expands beyond the *Blueprint*, by demonstrating the return on investment of a corporate lactation program. Citing several studies, USDHHS and HRSA show employers the business savings created by a corporate lactation program, including less maternal absenteeism, lower health care costs, lower turnover rates, and higher productivity and loyalty.

Providing minimal components, such as privacy, flexible breaks, education, and support, companies can reap the biggest savings.

At the State level, to date, 44 states have laws that protect a woman's right to breastfeed and 24 states have laws related to breastfeeding in the workplace (National Conference of State Legislatures, 2010). In Texas, House Bill 359 was passed in 1995, amending the Health and Safety Code (§§165.001-165.004 & §§165.031-165.034), which specifically entitles a mother to breastfeed her baby in any location in which the mother is authorized to be. This legislation also allows businesses to become designated as "Mother Friendly" for promotional purposes, if policies are developed to support the breastfeeding mother. The business must allow work schedule flexibility, access to a clean, safe water source, and accessible locations that allow for privacy for the mother to pump. The State of Texas has created, under the Department of State Health Services and the Nutritional Service Section, a program to assist with the promotion and the development of "Mother-Friendly Worksites." In addition above policy requirements, a completed application must be submitted with a policy detailing the support of the breastfeeding mother. Currently, 244 Texas businesses are registered with the Texas Department of State Health Services (TXDSHS) as "Mother Friendly" (TXDSHS, 2010).

Policy Analysis

Using the Bird and Rieker (2008) conceptualization of a constrained choice model, one can begin to breakdown current policies and how they will affect mother, infant, family, employer, and society.

At the uppermost level of the model is social policy. According to Bird and Rieker (2008), governments need to set priorities and allocate resources regarding the public's

health and well-being; sometimes with a tradeoff between public good and individual rights. The *Breastfeeding Promotion Act* (HR 2236) is one such policy that needs to be evaluated at this higher level. In the text of the proposed legislation, and as previously mentioned, Congresswoman Maloney intends to amend the Civil Rights Act of 1964, allow tax credits for employers who provide an appropriate environment on the business premises for the breastfeeding mother, Federal oversight of breast pumps, and expand the definition of medical care in the Internal Revenue Code to include breastfeeding equipment and services.

When looking at this proposed legislation from a Federal expense standpoint, two of the four proposals will likely increase costs the U.S. taxpayers. First, as an amendment to the Civil Rights Act and the Fair Labor Standards Act, the risk of litigation is possible from breastfeeding mothers who are denied their right to nurse their infants in public areas or during work hours. Second, the section of Congresswoman Maloney's legislation that allows for safe and effective breast pumps would require standards be put in place for communal use breast pumps, with the issuance of a compliance policy guide and require that breastfeeding mothers are provided full and complete information with respect to breast pumps. These requirements will cost money to develop and maintain. In addition, if such standards are put in place, then who will monitor these standards and assure that ongoing compliance is maintained? The other proposals will affect the tax revenue of the United States. By providing tax credits, this would incentivize mothers to breastfeed and employers to provide appropriate breastfeeding locales, equipment, and consultation; however, this would reduce the amount of taxes that breastfeeding mothers and lactation-friendly employers would pay to the government.

The second level of the Bird and Rieker (2008) constrained choice conceptualization model is community action or the willingness of individuals to engage in certain health behaviors as functional part of the community in which they live. Looking at the *Breastfeeding Promotion Act* or the *Patient Protection and Affordable Care Act* on a superficial level, one might not see how community action could affect workplace lactation programs. However, in a pro-breastfeeding community such legislation might be the impetus for grassroots campaigns to encourage businesses to provide options for breastfeeding mothers who wish to return to work.

The third and final level of the constrained choice conceptualization model (Bird & Rieker, 2008) is work and family. The change in women's family, social and workplace roles have given little options for the working woman who wishes to combine breastfeeding and employment. Considerable complexity is added if the woman wishes to continue breastfeeding her infant after returning to work. Tremendous strain is placed on the woman to continue with her duties at home and at work, with little flexibility. It is at this level that the proposed legislation may have the greatest, positive impact. Converse to the previous discussion of loss of revenue to the Federal government, employers would benefit financially, through tax credits, by providing a lactation program to breastfeeding mothers. Additionally, families would see a tax credit of their own for breastfeeding equipment and consultation services.

By using the Bird and Rieker model (2008) one can begin to see the positive and negative impact that Federal legislation could have on breastfeeding mothers, employers, and society as a whole.

Legislation and Policy Conclusion

Federal and State governments and departments, as well as professional organizations have gone to great lengths to encourage, support and protect a woman's right to breastfeed and/or express milk for their infants; yet, barriers and constraints still exist. Employers fail to recognize the benefits of breast milk, not only to the mother and child, but to the workplace itself. Past legislation and initiatives have shown that corporate lactation programs are an effective way to increase the duration of breastfeeding and save companies money. Proposed legislation attempts to resolve the continued disconnect between breastfeeding mothers and employers. However, such legislation may not be an appropriate "means to the end." A balance must be reached between costs to the people and gain to the employer and the breastfeeding mother and infant. There is no doubt on the physical health and financial benefits of breastfeeding; however, rather than Federal legislation, State legislation with regional and local coalitions better serve the breastfeeding mother and her infant. The first step to increasing breastfeeding rates and facilitation full-time employment and breastfeeding is employer education on the benefit of breastfeeding to the business itself, such as the *The Business Case for Breastfeeding* (USDHHS, 2008). In turn, these programs will provide the necessary incentives for mothers to initiate and continue breastfeeding upon return to work.

Levels of Lactation Support

Bar-Yam (1997) described support of lactation in the workplace as a continuum, with four levels: lactation program, lactation support, lactation awareness, and no lactation support. A lactation program is the most comprehensive of all the four levels of support. Most important is that mothers have a designated place to pump (Bar-Yam,

1997). This designated space should be equipped with a comfortable chair, a sink, an electrical outlet, good lighting and ventilation (Bar-Yam, 1997). The designated area should provider privacy with a locking door or an "occupied" sign (Bar-Yam, 1997). Breast pumps are made available for sale, rent, or provided by the employer (Bar-Yam, 1997). These employers also give breastfeeding working mothers the time and flexibility to nurse or express milk (Bar-Yam, 1997). A lactation consultant is available to work with the mother as she approaches her due date, while she is on maternity leave, and when she returns to works so that the transition back to work is well planned and assist her in new demands (Bar-Yam, 1997). The lactation consultant may also provide education and support to male workers who are becoming or have recently become fathers, as well as providing guidance and education to supervisors, managers, and administrators (Bar-Yam, 1997). Some workplaces may also have on-site or near-site daycares that allow mothers to nurse their infant during the workday (Bar-Yam, 1997).

Lactation support is not a full-fledged program. Support is in the form of an equipped room and time for breast milk expression (Bar-Yam, 1997). Breast pumps are also made available for sale, rent, or free through the employer (Bar-Yam, 1997).

Lactation awareness is minimal. Mothers have a designated space, such as an empty office, but may not be equipped like those seen with a lactation program or lactation support. The employer does not have specific policies either, rather a mother and her supervisor work out an arrangement (Bar-Yam, 1997).

Most companies provide no support for their breastfeeding working mothers. Employers are not mandated to provide support to these women. Mothers who wish to continue breastfeeding upon their return to work must fend for themselves to find the time and space for expressing milk.

Minimal literature exists on the outcomes of employer support or employer-sponsored lactation programs. One study followed a convenience sample of breast-feeding and formula-feeding mothers and their infants until the infant weaned or reached one year of age and examined the frequency and severity of infant illness among the two groups (Cohen, Mrtek, & Mrtek, 1995). Mothers (N = 101) were followed in two companies. The well-baby group, defined as those who experienced no illness during the study, was composed 86% breast-fed babies and 14% formula-fed babies (X^2 (1) = 10.398, p < .005) (Cohen, Mrtek, & Mrtek, 1995). Illness episodes (upper respiratory infections, gastrointestinal infections, and/or otitis media) were also significantly different between the breastfed infants and the formula-fed infants. Among the 73 infants in the groups, there were 205 illness episodes; 88 occurred in the 35 breast-fed infants and 117 in the 38 formula fed infants (p < .05) (Cohen et al., 1995). Finally, maternal absences as a result of the illnesses were examined. Of the 40 illnesses that caused one day absences for the mother, three quarters were in formula fed babies; the remaining 25% occurred with breastfed babies. (X^2 (1) = 4.527, p < .05) (Cohen, Mrtek, & Mrtek, 1995).

Of the studies that looked at the effect of employment on the duration of breastfeeding, three were retrospective in design and the interventions conducted were not done by the researchers, but rather the programs examined were previously in place (Balkam, Cadwell, & Fein, 2011; Cohen & Mrtek, 1994; Ortiz et al., 2004; Whaley, Meehan, Lange, Slusser, & Jenks, 2002). Balkam et al., (2011) looked retrospectively at the participation of 303 women who had participated in a workplace lactation program. The workplace lactation program offered several options for expecting mothers and mothers who return to work. This study found that respondents who received three or

more services were more likely than not to be breastfeeding exclusively at six months (Balkam et al., 2011). Additionally, if the mother "joined" the program prior to birth, they were more likely to be exclusively breastfeeding at six months, compared to their counterparts who joined the program around the time they returned to work (Balkam et al., 2011)

Cohen and Mrtek's aim was to examine the impact of two, separate corporate lactation programs on the duration of breastfeeding among employed women. Of the 187 participants since the programs inceptions, 75% breastfed until their child was six months old, with the average duration of breastfeeding at 8.1 months.

Ortiz et al. (2004) sought to determine the duration of breast milk expression among working mothers in an employer-sponsored lactation program. Along the same vein, Whaley et al. (2002) hypothesized that employees would continue to breastfeed significantly longer than national averages when worksite breastfeeding activities are in place.

Ortiz et al. (2004) reviewed the lactation consultants' charts from 462 women across five corporations. In addition to access to lactation consultants, the participants had access to a private, locked room, insulated tote bags with ice packs, bottles, breast pump rental, and classes. All but one of the corporations paid for the pump accessories. Additionally, the breast pump was provided to the employee two weeks before maternity leave ended, with instructions given in person or by phone. Employees used regular breaks and lunch time for pumping. The lactation consultant met regularly with the participant, including upon enrollment, around the baby's due date, weekly for the first month postpartum, and as needed until the mother stopped pumping.

Whaley et al. (2002) explored the breastfeeding support with employees of a Women, Infants, and Children (WIC) program. They assessed 121 participants, with a 92-item pre-test, regarding the individual factors that influence breastfeeding and duration. The participants were placed in a paraprofessional or professional group. Among the paraprofessional group, four factors were revealed to be significant predictors of breastfeeding duration: intent to exclusively breastfeed (p <.001), introduction of infant formula (p <.01), attendance at breastfeeding support groups (p <.01) and availability of worksite breast pumps (p <.05) (Whaley et al., 2002). These accounted for 30% of the variance in the duration of breastfeeding (F = 4.52, p <.001) (Whaley et al., 2002).

These studies supported the notion that with worksite programs in place, mothers can be successful with combining full-time employment and breastfeeding. The characteristics of the programs included support groups, including Certified Lactation Consultants (CLCs), availability of worksite breast pumps, provision of time that avoided interference with productivity, and private, locked rooms.

These studies also have their limitations. First, the study locales were conducive to supporting the breastfeeding mother. The Cohen (1995, 1994) and the Ortiz studies (2004) were conducted within large corporations and Whaley et al. (2002) in WIC offices. Second, none of the studies utilized a control group such as breastfeeding mothers in the workplace that were not participating in the programs.

These programs demonstrated that employer-sponsored lactation programs increased the duration of breastfeeding among mothers working full-time. Additionally, as a result of these programs, the duration of breastfeeding met or exceeded the Healthy People 2010 goal at six months. Ortiz et al. (2004) found that at six months,

57.8% continued to breastfeed, which is well above the Healthy People 2010 goal of 50%. Of the participants in the Whaley (2002) study 87.9% were breastfeeding at six months. At twelve months, these figures significantly drop to 18.2% (Ortiz et al., 2004) and 68.6% (Whaley et al., 2002).

An additional program described in the literature is a male-focused breastfeeding promotion corporate lactation program (Cohen, Lange, & Slusser, 2002). "The Fathering Program" began in 1990 at the Los Angeles Department of Water and Power as an expansion of the breastfeeding support program for female employees. A retrospective review of data revealed the value of including fathers of breastfeeding employees. One-hundred twenty eight eligible men and their partners participated in the program over a period of 17 months, of which 66% of the female partners were employed either part-time or full-time (Cohen et al., 2002). Infants of the fathers who participated in the program breastfed for an average of eight months and 66% of the infants were breastfeeding at six months (Cohen et al., 2002).

Chapter Summary

The literature related to breastfeeding in the workplace ranges from extensive regarding the mothers' perspective to minimal regarding the employer perspective and outcomes of workplace lactation support. There is a gap in the literature regarding employer attitudes and their intent to support breastfeeding in the workplace. To date only three studies (Bridges et al., 1997; Dunn et al., 2004; Libbus & Bullock, 2004) have assessed and reported on the assessment of employer attitudes on breastfeeding in the workplace and their intent to support the breastfeeding working mother. Only one study can be found that describes the relationship between size business size and level of employer breastfeeding support (Dunn et al., 2004). Additionally, only no studies could

be found that examined centralization, or the concentration of power and control held by the employer, and the provision of a lactation support program. This study sought to address these gaps by assessing the presence or absence of lactation support based on these constructs in the DOI.

Lactation support is influenced by many factors, that should be assessed in order to understand why an employer may or may not be willing to implement a program. This understanding will lead to the employer "buy-in" regarding the need for a workplace lactation program, conceptualization of a program and the planning for the adoption and implementation of such an innovation in small business employers.

CHAPTER THREE: METHODOLOGY

This chapter describes the methodology used to conduct the study, the purpose of which is to assess employer attitudes and intent to support breastfeeding in the workplace. This study investigated the characteristics of small business employers in Central Texas; examined the relationship between employer characteristics and presence of lactation support, including the mediating (relative advantage, complexity, trialability, and observability) and moderating (intent) factors, to the presence of lactation support in the workplace; and explored the applicability of Diffusion of Innovation (DOI) (Rogers, 2003) theory to this topic and population. This chapter explains the research design, sample and setting, procedures for data collection, the instrumentation and methods for data analysis for the research question.

Design

The research questions for this study were addressed by quantitative methods. A cross-sectional, descriptive design was used to investigate the employer (sample) characteristics, their attitude toward supporting breastfeeding in the workplace and explored factors that may mediate or moderate support of breastfeeding in the workplace. Using logistic regression, selected variables were examined and the presence or absence of lactation support in the workplace was regressed on these variables. Additionally, the influence of four mediating (relative advantage, complexity, trialability, and observability) and one moderating (intent) variables were explored.

Sampling and Setting

This study utilized an Internet-based survey of small business employers in the Central Texas area. The use of an Internet-based survey was based on primarily on the ability to reach a high volume of potential participants over a wide geographic location.

The selection of small business employers was based on the lack of current research about small businesses and their support of breastfeeding women. The study utilized the United States Small Business Association (USSBA) definition of a small business as one with 500 or fewer employees (USSBA, 2009). The USSBA maintains a database of registered businesses in the United States, the Central Contractor Registration (CCR) and the Dynamic Small Business Search (DSBS). Small businesses have the opportunity to enter profile data into the CCR, which populates the USSBA's Supplemental Pages, also known as the DSBS. Those businesses who wish to do business with the Federal government must be registered in the CCR; there is no cost to the business to be registered with the USSBA CCR. This database can be viewed by contracting officers, large prime contractors, and the general public. Additional certifications are available for small businesses through the USSBA, if they qualify, including HUBZone, and 8(a) certifications and these certifications require an application to the USSBA. HUBZone provides contracting assistance to small businesses located in historically underutilized business zones located in economically distressed communities. The 8(a) program requires that the small business be unconditionally owned and controlled by one or more socially and economically disadvantaged individuals who are of good character and citizens of the United States.

The convenience sample for this study consisted of small businesses in Bexar, Hays, Travis and Williamson counties. Contact was made with the District Director in the San Antonio District Office and access was provided to the Dynamic Small Business Search (DSBS) database. An initial search of the small businesses in the counties of Bexar, Hays, Travis, and Williamson yielded a return of 2,413; 128; 1,393, and; 357 small businesses, respectively. Inclusion criteria were as follows: (1) registered Small

Business through the CCR and DSBS databases; (2) access to the Internet, and; (3) consented to participate in the study.

A power analysis, conducted in G-Power 3.1.2© (Faul, Erdfelder, Lang, & Buchner, 2007) revealed that for a two-tailed logistic regression test with an effect size of 0.3 (moderate), an alpha level (α) of 0.05, and power of 0.80, and PR(y=1|x=1)HO, a sample size of 143 was required. The power, or probability that a statistical test will detect a significant difference if one actually exists, was set at .80, the desirable level in behavioral scientific research (Burns & Grove, 2009). Peduzzi, Concato, Kemper, Holford, and Feinstein's (1996) work suggest the following guideline for a minimum sample size for logistic regression: N = 10(k)/p; with "k" being the number of covariate or independent variables (attitude, centralization, interconnectedness, and business size) and "p" being the smallest of the proportions in the population (28.4%). Dunn et al. (2004) reported the percent of overall provision of breastfeeding support services of 28.4%. Therefore, per the Peduzzi equation the minimum sample size required for four independent variables would be 142. To account for missing data, unusable surveys, and to ensure that at least 142 participants had completed the entire survey, oversampling continued until 299 responses were received. After eliminating incomplete surveys, the final sample size was 148.

Data Collection Procedures

Prior to initiation of the study, the Institutional Review Board from the University of Texas at Austin reviewed and approved this study. Potential study participants were identified through the CCR and DSBS database. The survey consisted of an introductory email, a Business Characteristics Survey and the Employer Support of Breastfeeding Questionnaire (ESBQ) (Rojjanasrirat et al., 2010). The survey totaled 66 questions and

took an average of 15-20 minutes to complete. Each questionnaire was translated to Spanish and "back translated" to English to ensure accuracy.

At the beginning of the month (February, 2011), the DSBS was accessed and small businesses in Bexar, Hays, Travis, and Williamson counties were queried. The primary criterion for the query was that the business could not have greater than 500 employees. Additionally, the HUB and 8(a) certification status were requested. As a result, 4,291 business were identified in the four counties. Approximately 7% were designated with an 8(a) certification and 3% as HUB. Figure 2 illustrates the segmentation by county.

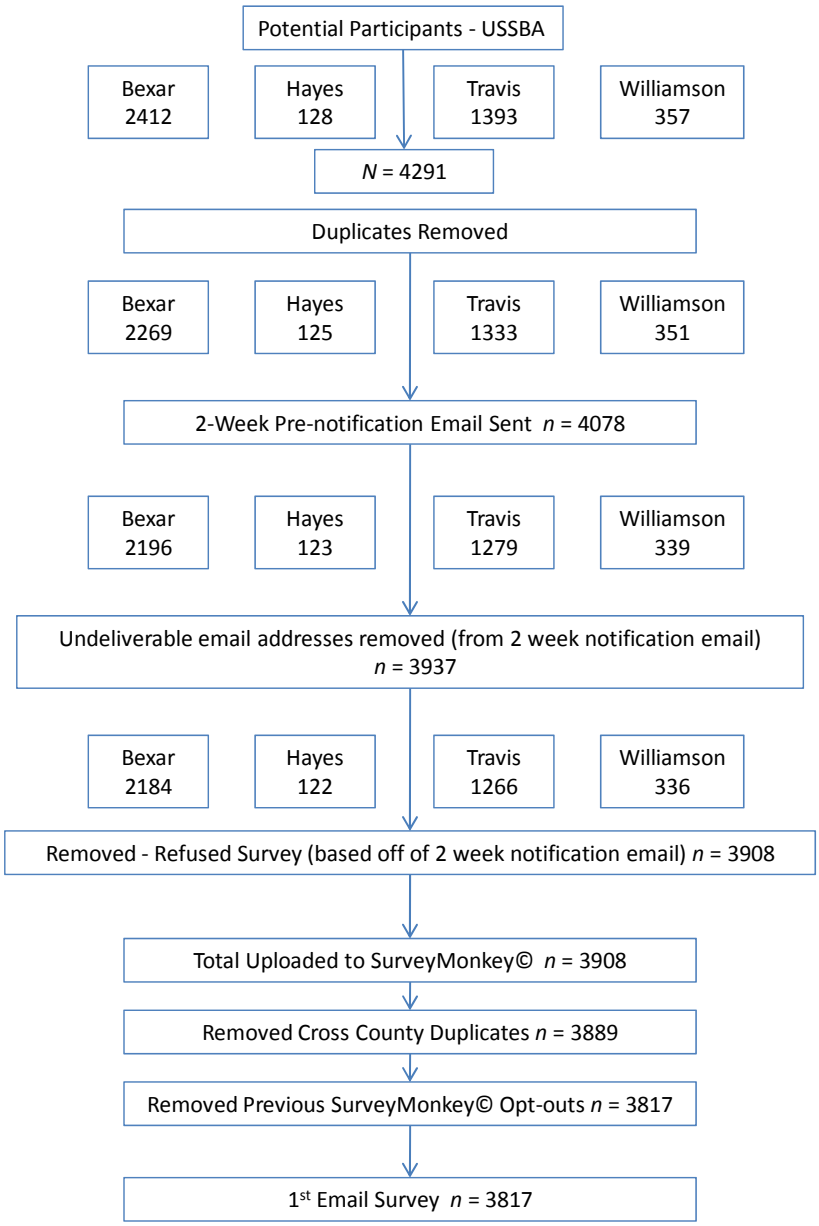

Figure 2. Initial Identification of Potential Participants

The DSBS outputs data in various formats. As a result, two lists for each county were obtained: 1) a full list of every business in the county that met the number of employee criterion which included name of the business, contact person, physical address, email address of contact, HUB status, and 8(a) status; and 2) a list of contact email address that was compatible with email systems and SurveyMonkey®. The two lists were compared as the total number of businesses did not reconcile. A line-by-line comparison revealed that the email compatible list automatically removed duplicate email addresses resulting in fewer businesses. A second review revealed that unique, but similar, email addresses remained on the email compatible list. For example, if one letter was capitalized in one email address but not on another, the email address was listed twice. If two addresses were found to be unique, but similar, the business name, address, and contact person were visually compared. One of the two email addresses was deleted if it was found that two introductory emails or surveys to the same person would result. After this review the final number was 4,078.

Using a dedicated email address (smillsRN@mail.utexas.edu), an introductory email was sent to all the de-duplicated small businesses in Bexar, Hays, Travis, and Williamson counties two weeks before the survey release. The purpose of this email was to alert potential participants to the upcoming survey and request participation (see Appendix A). Hart, Brennan, Sym, and Larson (2009) found a four percentage point increase in internet response rates for those that received a pre-notification email, compared to a group that did not receive the pre-notification. The introductory email was sent to the contact person at each small business noted in the SDBS database approximately two weeks following the pre-notification.

The 4,078 introductory emails were sent out over a period of three days in batches of 20, 50, and 100. No return receipt was requested due to the volume. Over the course of the next two weeks, several types of responses were received. These were categorized as follows: undeliverable (*n* = 141), refused survey (*n* = 29), and agreed to participate in survey (*n* = 22). Those potential participant email addresses that remained (*n* = 3,908) were assumed to be valid and willing to participate. Reasons for refusal to participate in the survey included having never employed women of childbearing age, one-employee/owner business, not interested, and disagreement with allowing breastfeeding/pumping in the workplace.

Prior to the survey being sent, it was checked for accuracy, grammar, spelling, and punctuation issues prior to sending to potential participants. Additionally, the question and page logic was double-checked by a second independent reviewer. "Question logic" was enabled on five questions. "Question logic" was enabled on the very first question which asks respondents if they would prefer to take the survey in Spanish or in English; upon the response the participant is directed to the applicable survey. Next, on both the English and Spanish versions, item 13 of the Business Characteristics Survey asked "Do you provide a designated private room/place to pump?" If the respondent answered yes, they were directed to additional questions that explored the features of the room, such as a locking door and/or electrical outlets. If the respondent answered no then these additional explorative questions were skipped and they moved on to the next questions. The next question logic was applied to the final question in the English and Spanish survey. This final item asked if the respondent wished to receive additional information on how to become a State of Texas "Mother Friendly" business. If the respondent answered yes, they were directed to an screen

that asked for contact information. If they answered no, then they were directed to a “Thank You for Participating" screen.

Approximately two weeks after the introductory email was sent, the potential participant email addresses (*N* = 3,908) were “loaded” into SurveyMonkey® and sent to the contact person at each small business noted in the U.S. SBA Dynamic Small Business Search database. At that time SurveyMonkey® noted that 72 emails had previously declined any surveys from their site, so these were eliminated from the list. In addition, SurveyMonkey® identified 19 duplicate business that crossed counties, i.e. a business located in Bexar and Travis County, and were not identified with the original screening. A total of 3,817 emails were delivered to business who had valid email addresses and who had not refused to participate (See Figure 2). SurveyMonkey® allows for a survey to be sent a future date and time; this feature was enabled.

Each contact person received a brief email that described the survey and contained a link that was uniquely tied to their email address (see Appendix B). This survey email contained a link to the survey and gave the participant a link to "opt out" of the survey and any future emails from SurveyMonkey®. The link in each email was uniquely tied to that potential participant's survey and the participant's email address; so participants were asked to please not forward the message. After selecting to take the survey in English or Spanish, the participant was directed towards the consent page of the survey. The participant was informed of the voluntary nature of the survey and that they could decline to answer any of the questions. The participant then "agreed" or "disagreed" via a radio button to participate in the survey or decline. This was only question on the survey that "forced" a response. The participant could have also used the "X" at the upper right corner of the screen to close the window.

Following the consent to participate in the survey, participants completed a short questionnaire that describes the businesses' characteristics, such as number of employees, number of female employees, and provision of breastfeeding support services (see Appendix C). Next, participants were asked to complete the Employer Intention to Support Breastfeeding Questionnaire (ESBQ), a 42-item Likert scale instrument (Rojjanasrirat et al., 2010) (See Appendix C). At the end of the survey, the respondents had the opportunity to request information on how to become a “Mother-Friendly Worksite” and/or more information and resources that describe the benefits and implementation of a lactation program. The first email request to participate yielded 179 complete and partial responses (See Figure 3). Two of these had "refused" via email, but later completed the survey.

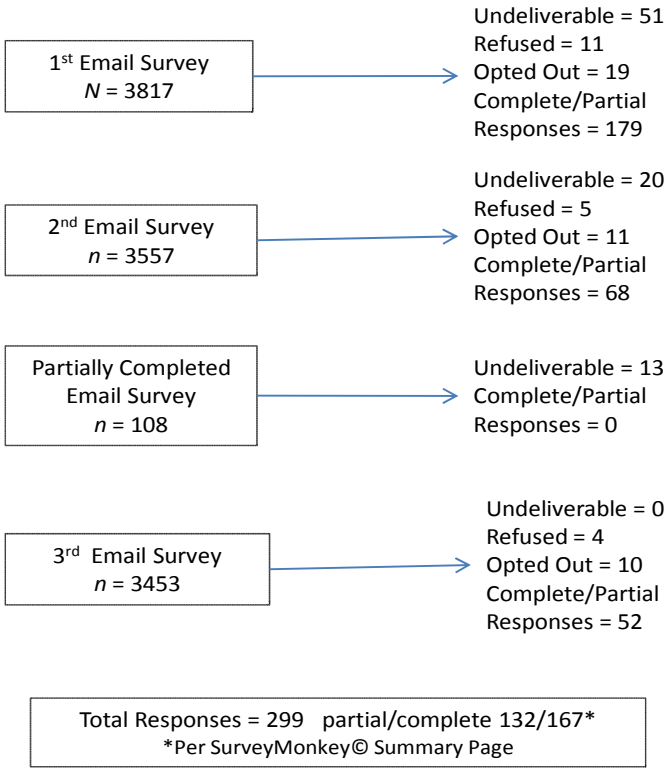

Figure 3. Survey Distribution

A second email was sent three weeks later to those potential survey participants that had not responded. Prior to this second email being sent, the contact list was scrubbed of undeliverable email addresses, "opt out" requests, and email addressed that had responded to the dedicated email address (smillsRN@mail.utexas.edu) to be removed from the list. A total of 81 addresses were removed, yielding 3,557 second requests to complete the survey (See Figure 3). Sixty-eight responses were received as a result of the second request.

Four weeks following the second email delivery, data were downloaded from SurveyMonkey® and scanned for completeness and noted that approximately 108 participants had only partially completed the survey (See Figure 3). As a result, a follow-up request was emailed out and yielded no responses. It was also noted that 13 requests were returned as undeliverable.

One week following a third request was sent to 3,453 participants who had not responded to the survey (See Figure 3). This yielded an additional 52 surveys. Four potential participants refused and an additional 10 opted out. Approximately two weeks after the third request, the survey was closed to potential participants and additional responses. At the end of the collection period 299 surveys were submitted. Survey data were then downloaded from the SurveyMonkey® website via a secure link and analyzed for completeness. After a thorough review it was determined that out of the 299 surveys only 148 met the requirement of no more than 10% of the survey instrument items missing (4 questions). Interestingly, 51 of the surveys were not completed past the two initial items, description of the project and consent.

Protection of Human Subjects

Privacy and Confidentiality of Participants

As previously mentioned, the Institutional Review Board from the University of Texas at Austin reviewed and approved this study. Anonymity is possible with the use of the Internet. Since the survey is via the Internet, the researcher and the respondent lack knowledge of each other (Fawcett & Buhle, 1995). Additionally, there is no face-to-face contact between the researcher and the respondent providing another layer of anonymity. Tracking the identity of respondents to the survey is an optional feature with Survey Monkey©. Two options existed to collect survey responses: 1) a web link that will allow the collection of anonymous surveys by posting a link that is sent out from a dedicated email address/box, or 2) an email invitation, which will track respondent through "unique" links delivered by the Survey Monkey© mail server. Option two was selected for this research project. This project also had a dedicated email address for any questions and/or concerns. This email address was password protected and the researcher was only individual with knowledge of the password and access to the email inbox. According to Im and Chee (2002), when data are transmitted through the Internet, the only information that can be linked to the respondent's personal identity is their Internet Protocol address (IP address). These IP addresses were deleted from the data sheets prior to analysis and not saved in the documents.

Security and Confidentiality of the Research Data

In order to maintain a high level of security, a Secure Sockets Layer (SSL) encryption feature was enabled through SurveyMonkey®. An SSL works through a cryptographic system that secures a connection between a client and a server. This SSL will protect the data as it moves between the respondent's computer and the

SurveyMonkey® servers. The respondents survey answers were encrypted as they are delivered back to the SurveyMonkey® account. A survey link with SSL encryption will show an "s" in the URL address. Physical security at SurveyMonkey® includes: servers kept in a locked cage and entry requires a passcard and biometric recognition; digital surveillance equipment; controls for temperature, humidity, and smoke/fire detection, and; staffing 24 hours a day, seven days a week. The network is protected by the use of multiple independent connections to Tier 1 Internet access providers; monitoring of uptime every five minutes; use of firewalls to restrict access, and; weekly network security audits and daily security scans. Finally, there is SSL encryption of all billing data and passwords, data are backed up every hour internally and backed up every night to a centralized backup system. There are offsite backups in the event of a catastrophe.

Data were downloaded directly from SurveyMonkey® or were requested via the SurveyMonkey® website and sent in a secure email. Data were eradicated from dedicated email box once the data were downloaded to the researcher's personal computer. Once downloaded, the data were stored on a personal computer that was password protected; additionally, the password protection security function was enabled on the Excel file. At the completion of this project, data will be eradicated from SurveyMonkey®.

Instrumentation

To begin this section, each of the instruments that were utilized in the study is described. Next, the psychometric properties of the Employer Support Breastfeeding Questionnaire (ESBQ) (Rojjanasrirat et al, 2010), the primary instrument in this study, will be described in detail. Finally, the individual items from each of the instruments will

be listed, that correspond to variables in the theoretical model, as described in Chapter One.

Data regarding characteristics of the businesses were collected and included, but not be limited to: location of business, number of employees, male to female ratio, type of business (i.e. research and development, construction, or manufacturing, service), knowledge of any employees currently breastfeeding, accommodations for employees that are currently breastfeeding, and the position held by the person completing the survey (see Appendix C).

Currently there are four published measures of attitude and support for breastfeeding from an employer's perspective: the Employer Support for Breastfeeding Questionnaire (ESBQ) (Rojjanasrirat et al., 2010), the Attitude Toward Breastfeeding Questionnaire (Bridges et al., 1997), the Employer Attitude Towards Breastfeeding (Libbus & Bullock, 2002), and the Worksite Infant Feeding Survey (Dunn et al., 2004). All four instruments share many item types including public image, productivity, recruitment, absenteeism, turnover. and morale. However, no psychometric properties were published for the Attitude Toward Breastfeeding Questionnaire and the Worksite Infant Feeding Survey; only a test-retest reliability of the scale (0.88) was published for the Employer Attitude Towards Breastfeeding (Libbus & Bullock, 2002). Since all four instruments share many of the same measures, only the ESBQ was selected as the primary instrument for this study, as the psychometric properties of the instrument have been published (Rojjanasrirat et al., 2010).

Employer Support for Breastfeeding Questionnaire (ESBQ)

The focus of the ESBQ is to examine employers' intent to support breastfeeding in their businesses. The ESBQ (see Appendix C) is a 46-item instrument that was

derived from the constructs of the Theory of Planned Behavior (TPB) (Rojjanasrirat et al., 2010). Three major constructs drive an individual's intention: attitude toward the behavior; subjective norms or the perceived social pressures to perform a behavior based on the beliefs about the expectations of others, and; perceived behavioral control (Rojjanasrirat et al., 2010). Eight subscales are contained in the 46-item instrument: direct attitude, behavioral beliefs, outcome evaluation, overall direct subjective norms, normative beliefs, motivation to comply, perceived behavioral control, and intention to support (Rojjanasrirat et al., 2010). Each individual measure is rated on a five-point semantic differential scale. During instrument development, Item Content Validity Index (I-CVI) ranged from 0.66 to 1.00; 14 items had an I-CVI below the standard recommendation of 0.80 or greater (Rojjanasrirat et al., 2010). These items were revised per experts' comments and suggestions, to improve the CV (Rojjanasrirat et al., 2010). A CV score of .80 or better indicates good content validity or that the instrument as an appropriate sample of items for the construct being measured (Polit & Beck, 2004). Overall content validity of the ESBQ was 0.90.

Attitude subscale of ESBQ.

The ESBQ (Rojjanasrirat et al., 2010) measures attitude toward supporting breastfeeding using three subscales consisting of 27 questions out of the 46 items: direct attitude, behavioral beliefs, and outcome evaluation. Five of the questions (items D1 - D5) are a direct measure of attitude towards supporting breastfeeding, or the degree to which an individual negatively values or positively values supporting the breastfeeding working mother. These five items can be scored from *very negative* (5) to *very positive* (25). Three of the items are reversed scored/coded. The two indirect measures for attitude subscale account for the remaining 22 items, behavioral beliefs

(item E1 - E11) and outcome evaluation (item E12 - E22). The five point semantic differential scales are scored from (1) *not important* to (5) *important*; the higher the score the more positive the attitude toward supporting breastfeeding. Behavioral beliefs measures a respondents' perception regarding the consequences of supporting breastfeeding in the workplace and outcome evaluation refers to the employers' negative or positive evaluation of the consequences of such support (Rojjanasrirat et al., 2010). The alpha coefficient, or Cronbach's alpha, for the direct attitude subscale was .87, behavioral beliefs was .92, and outcome evaluation was .92 (Rojjanasrirat et al., 2010). The range of values for an alpha coefficient can be between .00 and +1.00; the higher the value, the higher the internal consistency (Polit & Beck, 2004), thus these subscales have adequate internal consistency.

Subjective norm subscale of ESBQ.

Nine items make up the Subjective Norm subscale of the ESBQ. Subjective norm is defined as "the perceived social pressure to perform specific behaviors and is based on beliefs about normative expectations of others (normative beliefs) and the motivation to comply with those expectations" (Rojjanasrirat et al., 2010, pg. 287). A single item (item B1) is a direct measure of the overall subjective norm, or the degree to which people who are important to the respondent think he/she should or should not provide breastfeeding support. The response ranges from (1) *should not* to (5) *should* on a five point semantic differential scale. This is the social pressure of supporting the breastfeeding working mother. The remaining eight items (item C1 - C4), are paired questions and are indirect measures that assess the respondents' views on how their peers feel about supporting breastfeeding in the work place (social referents) and the degree the respondent is motivated to comply with each of the social referents

(Rojjanasrirat et al., 2010). These items are paired; each pair is multiplied together and then the products summed. The higher the score, the greater the subjective norm for breastfeeding support. The alpha coefficient of the normative beliefs subscale was .89 and motivation to comply subscale was .85 (Rojjanasrirat et al., 2010).

Perceived behavioral control subscale of ESBQ.

This nine item subscale (item F1 - F9) assesses the respondents' perception of their ability to support the breastfeeding working mother, as well as the degree to which he/she has control over the internal and external constraints in the work environment (Rojjanasrirat et al., 2010). Each item is scored on a five point semantic differential scale, from (1) unlikely, very little control, difficult, or *strongly disagree* to (5) *likely*, complete control, easy, or strongly agree. The responses are summed and range from nine to 45; the higher the score the greater the sense of control over the respondents' ability to provide support for the breastfeeding working mother. The alpha coefficient of this subscale was .83 (Rojjanasrirat et al., 2010).

Intent subscale of ESBQ.

One question (item A1) serves as the direct measure of the employers' intent. This question assessed the respondents' motivation to engage in supporting the breastfeeding working mother with informational, emotional, and/or technical support (Rojjanasrirat et al., 2010). This item uses a five point scale ranging from (1) *very weak* intent to (5) *very strong* intent.

Instrument Adaptation for Current Study

Specific items from the Business Characteristics Survey and the ESBQ, correspond to elements of the conceptual model presented in Figure 1 and in Table 3.1. The constructs for the adapted model for this study were subscales of the ESBQ or a

combination of questions from multiple subscales. Questions were combined from multiple subscales for relative advantage, observability, centralization, and complexity. These questions were selected based on face validity and similarity with the conceptual definitions in Chapter One.

The exact ESBQ intent subscale, one item, was used to measure intent for this study. Similarly, both of the subjective norm ESBQ subscales were used to assess the construct of interconnectedness, as they measured the degree to which people important to the respondent approve/disapprove of supporting breastfeeding working women, degree to which these people (social referents) think the respondent should support breastfeeding working women and the degree the respondent is motivate to comply with each of these social referents. These items aligned with the previously defined construct of interconnectedness or the degree units in a social system are linked by interpersonal networks (Rogers, 2003).

The single item, direct measure of attitude from the ESBQ was used to measure attitude in this survey. The constructs of relative advantage and observability were measured using a combination of questions from the two ESBQ indirect measures for attitude: behavioral beliefs and outcome evaluation subscales. For example, relative advantage was measured with items that measured perceptions on the breastfeeding mother's satisfaction with her roles as worker and family contributor, less turnover, and productivity; which could be viewed as an advantage of having a workplace lactation program. Items used to assess observability utilized questions that pertained to company recognition from employees and the public, which aligns with the conceptual definition in Chapter One or degree that the results of the innovation are visible to others (Rogers, 2003).

Measures of centralization and complexity consisted of a combination of questions from the ESBQ perceived behavioral control subscale. Rogers (2003) defined centralization as the power and control in a system that is concentrated to a few individuals; therefore, items were abstracted from the ESBQ that measured confidence in providing support, control over providing support, and decision making. For complexity, i.e. the degree to which an innovation is perceived as difficult to use and understand (Rogers, 2003), items from the ESBQ addressed the ability of the respondent to provide resources (information, time, room), time to encourage the breastfeeding working mother, and the ability to access equipment, such as breast pumps. Each item is presented below, with the range of potential responses following the question or statement.

Table 3.1. Study Variables and Instruments

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
Business Characteristics	Number of employees, employees currently BF, nature of business, benefits offered, current BF support, sex of respondent, position held by respondent	Business Characteristics Survey	Nominal, Interval	See Appendix C
Attitude (IV)	Degree to which an individual positively or negatively values supporting breastfeeding working mother	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	To me, providing support for the breastfeeding mother is: • Necessary --- Unnecessary • Embarrassing -- Not Embarrassing • Positive -- Negative • Important -- Unimportant • Beneficial -- Not Beneficial
Centralization (IV)	Power and control in a system that is concentrated to a few individuals	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	I am able to provide information about breastfeeding support for working mothers • (1) unlikely to (5) likely I am confident that I can provide support for the breastfeeding working mother • (1) unlikely to (5) likely

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
				How much control do I have over providing support for the breastfeeding working mother • (1) very little to (5) complete control For me, providing support for the breastfeeding working mother would be • (1) difficult to (5) easy Whether I provide support to the breastfeeding working mother is entirely up to me • (1) strongly disagree to (5) strongly agree The decision to carry out the activities necessary to provide support for the breastfeeding working mother is *beyond* my control • (5) strongly disagree to (1) strongly agree
Interconnectedness (IV)	The degree units in a social system are linked by interpersonal networks	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	Most people who are important to me think that I << (1) should not -- (5) should >> provide support for breastfeeding working mothers; (0) not applicable

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
				The head of my organization thinks that I << (1) should not -- (5) should >> provide support for breastfeeding working mothers; (0) not applicable Other supervisors like me think that I << (1) should not -- (5) should >> provide support for breastfeeding working mothers; (0) not applicable My employees think I << (1) should not -- (5) should >> provide support for breastfeeding working mothers; (0) not applicable Other colleagues think I << (1) should not -- (5) should >> provide support for breastfeeding working mothers; (0) not applicable In general, I want to do what the head of my organization thinks I should do • (1) unlikely to (5) likely

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
				In general, I want to do what other supervisors think I should do • (1) unlikely to (5) likely In general, I want to do what other supervisors think I should do • (1) unlikely to (5) likely In general, I want to do what my colleagues think I should do • (1) unlikely to (5) likely
Business Size (IV)	Number of employees	Business Characteristics Survey	Interval	Total number of employees
Presence of Lactation Support (DV)	Lactation Program, Lactation Support, Lactation Awareness, No lactation support.	Business Characteristics Survey	Nominal	Do you provide any of the following for your breastfeeding employees Designated private room/place to pump? • Yes/No If yes, does the room/place have a locking door or an "occupied" sign? • Yes/No If yes, does the room have access to clean, running water? • Yes/No If yes, does the room have an electrical outlet? • Yes/No

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
				If yes, does the room have a place to sit down? • Yes/No If yes, does the room have good lighting and ventilation? • Yes/No Do you provide break time for the employee to pump? • Yes/No Do you have a policy and procedure for lactation support for mothers returning to work? • Yes/No Do you offer benefits such as paid time off for maternity leave for your employees? • Yes/No Do you provide access to a certified lactation consultant? • Yes/No Do you provide breast pumps (sale or rent) for your breastfeeding working mothers? • Yes/No

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
Intent (PMod)	The employers motivation to engage in supporting breastfeeding working mothers	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	I would rate my intention to support breastfeeding (such as room, break time, breast pumps, information, or emotional support) in my workplace as • (1) very weak to (5) very strong
Relative Advantage (PMed)	The perception that an innovation is better than the idea it supersedes	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	If I provide support to a breastfeeding working mother and baby: The breastfeeding working mother will feel satisfied with her role as a worker and mother who contributes to the family • (1) unlikely to (5) likely I will have less turnover rate among employee • (1) unlikely to (5) likely The breastfeeding working mother is able to get her work done • (1) unlikely to (5) likely The baby will have fewer illnesses. (Therefore, less employee absenteeism) • (1) unlikely to (5) likely

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
				How important is it that the breastfeeding working mother will feel satisfied with her role as a worker and a mother who contributes to the family • (1) not important to (5) important How important is it that I will have less turnover rate among employee • (1) not important to (5) important How important is it that the breastfeeding working mother is able to get her work done • (1) not important to (5) important How important is it that the baby will have fewer illnesses. (Therefore, less employee absenteeism) • (1) not important to (5) important

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
Complexity (PMed)	The degree to which an innovation is perceived as difficult to use and understand	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	As a manager/owner/ director to breastfeeding working mothers, I am able to: Find time to provider resources (information, room, time) to each breastfeeding working mother • (1) unlikely to (5) likely Find time to praise and encourage each breastfeeding working mother's efforts • (1) unlikely to (5) likely Access equipment (i.e. breast pumps) when necessary • (1) unlikely to (5) likely
Trialability (PMed)	The degree that the innovation can be used on a limited basis	Business Characteristics Survey	Nominal	Are you aware of any women currently working in your place of business and breastfeeding/ expressing breast milk • Yes/No If yes, is the room designated as a lactation room on a permanent or "as needed" basis? • Permanent Basis/ "As Needed" Basis

Variables	Theoretical Definition	Instrument	Data Obtained	Instrument Items
BF = Breastfeeding; IV = Independent Variable; DV = Dependent Variable; PMod = Potential Moderator; PMed = Potential Mediator				
Observability (PMed)	The degree that the results of the innovation are visible to others	Employer Support Toward Breastfeeding Questionnaire (ESBQ)	Interval	If I provide support to a breastfeeding working mother and baby: I will receive recognition for my time and efforts from my employees • (1) unlikely to (5) likely The company will receive recognition for the time and efforts from the public • (1) unlikely to (5) likely How important is it that I will receive recognition for my time and efforts from my employees • (1) not important to (5) important How important is it that the company will receive recognition for the time and efforts from the public • (1) not important to (5) important

The individual (leader) characteristic, attitude toward changes, will be directly measured by the following five questions from the ESBQ. Each answer uses a semantic differential scale and has scoring range from (1) *very negative* to (5) *very positive*. "To me, providing support for the breastfeeding mother is:

Necessary --- Unnecessary"

Embarrassing -- Not Embarrassing"

Positive -- Negative"

Important -- Unimportant"

Beneficial -- Not Beneficial."

These five questions will be summed with scores ranging from five to 25, the higher the score indicating a more positive attitude towards breastfeeding.

As previously mentioned, the internal characteristics of the organizational structure are measured by a combination of questions from the Business Characteristics Survey and the ESBQ. Centralization, or the power and control in a system that is concentrated to a few individuals, will be measured with six items from the ESBQ. The questions "I am able to provide information about breastfeeding support for working mothers" and "I am confident that I can provide support for the breastfeeding working mother" are scored (1) *unlikely* to (5) *likely*; the questions "How much control do I have over providing support for the breastfeeding working mother" is scored (1) *very little* to (5) *complete control*; "For me, providing support for the breastfeeding working mother

would be" scored (1) *difficult* to (5) *easy*; "Whether I provide support to the breastfeeding working mother is entirely up to me" scored (1) *strongly disagree* to (5) *strongly agree*; "The decision to carry out the activities necessary to provide support for the breastfeeding working mother is *beyond* my control" scored (1) *strongly disagree* to (3) *strongly agree*. The final item was reverse coded to indicate scored (5) *strongly disagree* to (1) *strongly agree*. The composite score of the six items was used to evaluate centralization. Scores ranged from six to 30, with the higher score indicating a greater sense of control over the ability to provide breastfeeding support.

Interconnectedness, or the degree units in a social system are linked by interpersonal networks, will be measured with nine items from the ESBQ. Interconnectedness was defined as the degree units in a social system are linked by interpersonal networks (Rogers, 2003). These questions assess other peoples' influence, including those in the respondents' interpersonal network, in providing support to breastfeeding working mothers. It is this influence that could define the degree interconnectedness of the respondent, i.e. does what other people think about providing lactation support matter to the respondent. Five of the questions use a five point semantic differential scale, with responses ranging from (1) *should not* to (5) *should*. The questions are 1) "Most people who are important to me think that I <<should not -- should>> provide support for breastfeeding working mothers," 2) "The head of my organization thinks that I << should not -- should >> provide support for breastfeeding working mothers," 3) "Other supervisors like me think that I << should not -- should >> provide support for breastfeeding working mothers," 4) "My employees think I <<should not -- should>> provide support for breastfeeding working mothers," 5) Other colleagues think I << should not -- should >> provide support for breastfeeding working mothers."

The remaining four questions use a five-point semantic differential scale, with responses ranging from (1) *unlikely* to (5) *likely*. The questions are 1) "In general, I want to do what the head of my organization thinks I should do," 2) "In general, I want to do what other supervisors think I should do," 3) "In general, I want to do what my employees think I should do," and 4) "In general, I want to do what my colleagues think I should do." The composite of the multiplied items in the pair was used to evaluate interconnectedness as a predictor of breastfeeding support. Scores ranged from zero to 75, with the higher score indicating a greater degree of interconnectedness or the degree to which social referents think that the respondent should support breastfeeding working mother.

Size of the business was assessed with a single item, the total number of employees, from the Business Characteristic Survey. Raw numbers were utilized for data analysis.

Data on the potential moderator, intent to support the breastfeeding working mother, will be collected with one item from the ESBQ. The question is scored on a five point semantic differential scale; "I would rate my intention to support breastfeeding (such as room, break time, breast pumps, information, or emotional support) in my workplace as (1) *very weak* to (5) *very strong*."

Several potential mediators to work place lactation support were identified in Chapter Two, including relative advantage, complexity, trialability, and observability. Eight questions from the ESBQ will assess the potential mediator, relative advantage. Four questions use a five-point semantic differential scale, with responses from (1) *unlikely* to (5) *likely*: 1) "The breastfeeding working mother will feel satisfied with her role as a worker and a mother who contributes to the family," 2) "I will have less turnover rate among employees," 3) "The breastfeeding mother is able to get her work

done," and 4) "The baby will have fewer illnesses (Therefore, less employees' absenteeism)." The "matched questions" are four questions that use a five-point semantic differential scale, with responses from (1) *not important* to (5) *important* and assess how important is it that: 1) "The breastfeeding working mother will feel satisfied with her role as a worker and a mother who contributes to the family," 2) "I have less turnover rate among employees", 3) "The breastfeeding working mother is able to get her work done," and 4) "The baby has fewer illnesses?" The composite of the multiplied items in the pair was used to evaluate relative advantage as a mediating factor for breastfeeding support. Scores ranged from four to 100, with the higher score indicating a relative advantage.

Complexity was assessed with three items from the ESBQ. The questions use a five point semantic differential scale, with responses from (1) *unlikely* to (5) *likely* and as "As a manager/owner/director to breastfeeding working mothers, I am able to:

- Find time to provider resources (information, room, time) to each breastfeeding working mother. "
- Find time to praise and encourage each breastfeeding working mother's efforts."
- Access equipment (i.e. breast pumps) when necessary. "

Composite scores range from three to 15, with the higher score indicating less complexity to providing breastfeeding support in the workplace.

Trialability was assessed with two items from the Business Characteristics Survey. The first question, "Are you aware of any women currently working in your place of business and breastfeeding/expressing breast milk" is a yes/no response. The second question "Do you provide any of the following for your breastfeeding employees" will follow with a question regarding a designated private room/place to

pump and if provided, is the room is designated as permanent or on an "as needed" basis. Responses were coded with a dummy variable for input into the model.

Observability was assessed with four items from the ESBQ. Two questions use a five point semantic differential scale, with responses from (1) *unlikely* to (5) *likely*: 1) "I will receive recognition for my time and efforts from my employees" and 2) "The company will receive recognition for the time and efforts from the public." The matched questions are 3) “I receive recognition for my time and efforts from employees,” and 4) “The company will receive recognition for the time and efforts from the public?” The composite of the multiplied items in the pair was used to evaluate relative advantage as a mediating factor for breastfeeding support. Scores ranged from two to 50, with the higher score indicating the importance of observability.

The selected items from the Business Characteristics Survey and the ESBQ intended to assess and measure the constructs from the proposed theoretical model (see Figure 1). As previously mentioned, the constructs for the adapted model for this study were subscales of the ESBQ or a combination of questions from multiple subscales. Items were selected to measure each of the constructs based on the congruence or similarity of the question(s) to the construct in the DOI.

Internet Survey Challenges

Internet-based surveys inherently face many issues when it comes to ethical and recruitment issues (Im & Chee, 2002; Im & Chee, 2004). Ethical issues included anonymity and confidentiality, security, self determination and authenticity, full disclosure, and fair treatment (Im & Chee, 2002). Recruitment issues include low response rates, a selected group of participants, and importance of timing (Im & Chee,

2004). An additional issue to consider is that of informed consent. Privacy and confidentiality of participants and security were previously discussed.

Self-Determination and Authenticity

Im and Chee (2002) indicated that use of the Internet will allow participants to self-determine their participation and provide a better opportunity for participants to become informed about the research. Regarding authenticity, the use of the SBA Dynamic Small Business Search database should have alleviated any participation from business that did not meet the inclusion criteria. In addition, the database had query option for email addresses for the businesses' primary contact person and the survey will be sent directly to that email address. However, once the survey is sent, there is no guarantee that the primary contact listed on the database will be the person completing the survey. One question on the Business Characteristics portion of the survey identified the position, e.g. Human Resources Representative, Manager, Owner, etc., held by the person completing the survey.

Respondents were limited to one survey submission. An "Email Invitation," previously described, allows only one response at all times. An email message contains a link that is encoded with the recipient's information; however, a respondent can begin the survey at one point in time and finish it later, if needed.

Full Disclosure

The survey was sent to 3,817 small businesses in four counties, Bexar, Travis, Williamson, and Hays. All questions were in a radio button or drop-down format. No free text boxes were included, so operating versions, i.e. unreadable files, did not confound responses. A dedicated email address (smillsRN@mail.utexas.edu) and phone number was also provided to the potential and actual participants. Three telephone calls

were received regarding the survey itself and many participants responded with an in support of or opposed to the study.

Fair Treatment and Selected Groups of Participants

Unintentional exclusion of specific groups of people is an additional Internet research concern (Im & Chee, 2002). While use of the SBA Dynamic Small Business Search database help to mitigate issues with fair treatment, there were circumstances considered in the identification of potential participants. First, it is not clear if all small businesses have to be registered with the U.S. Small Business Administration or if this is an optional membership for small businesses. Business who are not part of the SBA are not included in the SBA database and consequently not included in the survey. Another unintentional exclusion is those businesses that do not utilize the Internet, as there are no plans for a written survey at this time to be mailed to those business who do not have an email contact in the SBA database. Additionally, primary language is not a selection on the query for the SBA database, so businesses that speak a language other than English or Spanish were unintentionally excluded.

Low Response Rates

Im and Chee (2004) reviewed three Internet-based studies, with all three yielding low response rates by potential participants. The response rate for the current project was difficult to predict; however, a sample size of 143 is required for a statistically significant sample. At the time of the first email request the SBA database reflected over 3,800 registered businesses in Bexar, Travis, Williamson, and Hays Counties. As previously mentioned, an introductory email was sent to these small business employers that described the survey and a timeline for participation in an effort to boost response rates; however, there is no way to assess the impact this introductory email may have

had on the response rate. The final response rate was 148 complete surveys out of the 3817 sent, resulting in a 3.8% response rate. All surveys were completed using the English version.

Importance of Timing

Timing was an important consideration for sending an Internet-based survey to small business employers. As a small business, it was assumed that the potential respondents did not have an extensive infrastructure, meaning that a few people may manage many departments. Therefore, the timing of sending the survey was intentionally determined to avoid the close of calendar year quarter, State of Texas fiscal year quarter and end of month. As a result the survey should not have interfered with business operations, such as managing payrolls or accounts receivable. Also, it was hopeful that by timing the distributions of the survey to avoid these sensitive periods decreased the risk of the survey being deleted by the potential respondents.

Data Analysis

Data was exported from SurveyMonkey® in an Excel format and uploaded into the Statistical Package for the Social Science (IBM SPSS statistics version 19). Data were checked for accuracy by visually inspecting responses to assure that each response falls within the range of the scales. Multiple answers and answers outside the scale range was not an issue, since the survey questions were programmed to accept only one answer within a pre-determined range, i.e. radio buttons that only allow one answer selection for each question. Additionally, missing data were noted and any questionnaire with greater than 10% of the data missing were excluded. As a result 151 surveys were excluded for missing data.

Prior to analysis of the remaining 148 surveys, imputation was used for missing data. Imputation is the process of estimating missing data based on other variables or cases in the sample that have valid values (Munro, 2005). The method of fully conditional specification was used to replace missing values; all variables with missing data were scale variables and were modeled with linear regression. Twenty-six (56.2%) of the 46 variables had between one and four missing responses. This accounted for missing responses in 40 (27.03%) of the 108 cases or 89 (1.31%) total values.

Descriptive statistics were conducted on business characteristics such as number of employees, number of female employees, age stratification of childbearing age women employed, general nature of the business, position held by the survey taker and their sex. Descriptive statistics included frequencies, measures of central tendency (mean, median, mode), and measures of variability (standard deviation, range). Data were analyzed to look at the general trend of the data and to assess for outliers. The general trend, or a normal distribution, of the data should be symmetrical and unimodal with a bell-shaped curve (Field, 2005). Outliers were considered those values greater than two standard deviations from the mean. Variable distributions were assessed for skewness and kurtosis. Variables that were dichotomous in nature included: the offering of health insurance, vacation time, sick leave, short-term disability, long-term disability; access to the Family Medical Leave Act (FMLA); awareness of any women currently breastfeeding; awareness of any employers of similar size or type providing breastfeeding support in the workplace. Additional dichotomous variables included the various type of breastfeeding support being provided in the workplace: private room, storage for breast milk, break time to pump, access to a Certified Lactation Consultant

(CLC), access to pumps for sale or rent, and a policy and procedure for lactation support. Dichotomous variables were coded zero (0) for "no" and one (1) for "yes."

For the outcome variable of breastfeeding support, "support" was defined as a "yes" response to any of the following questions: access to a *designated* room, break time to express milk, access to a Certified Lactation Consultant, access to breast pumps (for sale or rent), or policies and procedures to support the breastfeeding employee. The item "Do you provide paid time off for maternity leave?" was not included in the variable, as it was determined that the question was not presented in a clear manner and could have been confused with access to vacation or sick time. Additionally, the item "Do you provide a place to store (refrigerator) breast milk?" was excluded from the support outcome variable, as this question was not clear that the place to store milk was a dedicated refrigerator and not a general use refrigerator.

Fisher's Exact Tests were performed to see if any relationships existed between current breastfeeding support in the workplace and on the three awareness variables (awareness of any women currently breastfeeding; awareness of any employers of similar size or type providing breastfeeding support in the workplace). Chi Square tests were completed and tested the associations between current breastfeeding support and the various type of benefits offered by the employer (health insurance, vacation time, sick leave, short-term disability, long-term disability) and access to the Family Medical Leave Act (FMLA).

Logistic regression was performed to approximate how likely or unlikely lactation support is in the workplace accounting for the predictor variables attitude, centralization, interconnectedness, and business size. All significance tests were conducted at the .05 level. The Omnibus Tests of Model Coefficients and the -2 Log likelihood was used to

evaluate how the model predicts lactation support as each predictor was added to the model. "Goodness of fit" was tested through the Hosmer and Lemeshow Test, where a non-significant result indicated that the model did not significantly differ from the observed data (Field, 2005). The Cox & Snell and Nagelkerke statistics, similar to R^2 in linear regression, are estimates of the variance were accounted for in the analysis (Munro, 2005). The Wald statistic was checked for each predictor to see if the predictor was making a significant contribution (<.05) to the prediction of the outcome and the Exp(B) was used for interpretation for the odds ratio. Cases that potentially influenced the models was assessed through the standardized residuals; no more the 5% of the cases have an absolute value above two and no more than 1% have absolute values above 2.5 (Field, 2005). Multicollinearity was assessed with diagnostics such as the variance inflation factor (VIF) and the tolerance statistic. The independent variables should not correlate too highly and will be assessed through the collinearity diagnostics in SPSS (Field, 2005). Analysis of the moderating variable, intent, and the mediating variables, relative advantage, complexity, and observability, were centered to help make the output more interpretable and to help reduce the chance of multicollinearty (Lindley & Walker, 1993).

Research Questions

1. What is the proportion of workplace lactation programs in small businesses in Central Texas?

This question was addressed with the data obtained from the Business Characteristic Survey and analyzed using frequencies and proportion of responses. Overall responses were analyzed, in addition to the proportion of lactation support that currently exists.

2. What are the employer characteristics of small business in Central Texas who provide lactation support?

This question was addressed with data obtained from the Business Characteristic Survey and analyzed using frequencies and proportion of responses.

3. What is the predictive relationship among employer attitude, centralization, and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace?

Logistic regression allows for an odds ratio, approximating how much more likely or unlikely it is for an outcome to be present given certain conditions (Munro, 2005). Prior to performing logistic regression analysis, the data will be examined to verify that the assumptions of logistic regression have been met; as the sample must be representative of the population to which the inference will be made; there must be an absence of multicollinearity of predictors, relevant predictors are included, and irrelevant predictors are excluded, and; predictors are continuous or nominal variables (Field, 2005; Munro, 2005). It is proposed that the attitude, centralization, and interconnectedness will predict the presence of employer lactation support (H1. Attitudes towards breastfeeding employees will predict the presence of employer's lactation support in the workplace; H2. Greater centralization in a small business will reduce the likelihood of employer lactation support in the workplace; H3. Greater interconnectedness of a small business will increase the likelihood of employer lactation support).

4. What is the predictive relationship between business size and the presence of lactation support in the workplace?

Again, logistic regression will be used to obtain an odds ratio, approximating how much more likely or unlikely it is for an outcome to be present given certain conditions (Munro, 2005). It is proposed that the size of the small business will predict the presence of employer lactation support (H4. The size of the small business will predict the presence of employer lactation support).

5. What influence does intent to support breastfeeding in the workplace have on the presence of lactation support?

The proposed theoretical model suggests that intent may be a moderating variable that influences or affects the strength and/or direction of the relationship between the independent variables (attitude, centralization, interconnectedness, and business size) and the dependent variable, level of lactation support (H5. Intent will influence the presence of employer lactation support). Each independent variable and intent will be tested, using hierarchical regression, with the level of support provided. Analysis of the moderating variable of intent included transforming the zero point into the scale midpoint or neutral midpoint (Aguinis, 2004) of the predictor variables intent, attitude, and centralization to help eliminate any issues with multicollinearity and help make the moderator and intercept more interpretable, in addition to reducing the chance of multicollinearity (Lindley & Walker, 1993). As previously mentioned, intent is measured by one item, with a score ranging from (1) *very weak* to (5) *very strong* on the ESBQ; therefore, three was the midpoint of the scale and this was subtracted by each respondents overall score for intent. Similarly, attitude was measured by five items,

scored from (1) *very negative* to (5) *very positive*. Three, the middle score, was subtracted from the sum of each respondents overall score. Centralization, was measured with six items from the ESBQ with items ranging from (1) *unlikely* to (5) *likely*, (1) *very little* [control] to (5) *complete* [control], (1) *difficult* to (5) *easy*, and (1) *strongly disagree* to (5) *strongly agree*. Overall scores for centralization could range from six to 30; therefore, 18 was subtracted from the sum of each respondents overall centralization score. Because the size of the business is a raw number and the interconnectedness subscale scores allowed for a score of zero, these subscale were not centered (Aguinis, 2004). Next, the centered intent score was multiplied by each of the independent variables and added to the model, while controlling for benefits (health insurance, sick leave, vacation time) or knowledge of current breastfeeding occurring in the workplace and knowledge of other same size businesses. If a significant interaction is noted, then a moderator effect is present (Baron & Kenny, 1986).

Mediating Variables

Four mediating variables have been identified and while not among the research questions, their influence on the dependent variable (presence of lactation support) will be explored. It is proposed that relative advantage, complexity, trialability, and observability of a lactation program will predict the presence of a lactation support program (H6. Greater relative advantage and trialability of a lactation program will predict the presence of employer lactation support; H7. The greater the complexity of a lactation support the less likely presence of employer lactation support will be present; H8. Observability will influence the presence of an employer lactation support.).

Four mediating variables (relative advantage, complexity, trialability, and observability) were explored to determine if these mediating variables are a substantive

and significant part of the relationship between the independent variables (attitude, centralization, interconnectedness, and business size) and the dependent variable (presence of lactation support). Prior to any data analyses, the subscales that did not contain a meaningful zero were centered (Aguinis, 2004; Lindley & Walker, 1993). The independent variable subscales for attitude and centralization were previously described. The mediating variables relative advantage, complexity, and observability were centered by transforming the zero point into the scale midpoint or neutral midpoint (Aguinis, 2004). Relative advantage was assessed with eight questions with a summed score ranging from four to 100; therefore, the middle score, 52.5, was subtracted from the total score. Complexity was assessed with three items with a summed scores ranging from three to 15; to make the scores meaningful, the midpoint, nine, was subtracted from each respondents score. Finally, observability was measured with four items and the total scores ranging from two to 50; therefore, the middle score, 26, was subtracted from each respondent's total score.

Three regression equations were necessary to determine the effect of each of the mediating variables (Bennett, 2000; Lindley & Walker, 1993). First, the dependent variable, or presence of lactation support, is regressed on the each of the independent variables (attitude, centralization, interconnectedness, and business size). If significant, then each of the mediators (relative advantage, complexity, trialability, and observability) is regressed on the independent variables (step two). Finally, step three, the dependent variable was simultaneously regressed to the independent variables and the mediating variables. To substantiate a mediating effect, significant influences was sought on steps one and two, with a decrease in the coefficient in step three (Baron & Kenny, 1986; Bennett, 2000). A Sobel Test evaluates whether the mediators (relative advantage,

complexity, trialability, and observability) carry the influence of the independent variable (business size, attitude, centralization, and observability) to the dependent variable (presence of lactation support) (Preacher & Hayes, 2004). Using the unstandardized regression coefficient for the association between the independent variables and the mediators and the standard errors and the unstandardized regression coefficient for the association between the mediators and the dependent variables and the standard errors, a Sobel statistic was calculated for each independent variable and mediating variable.

Chapter Summary

This chapter described the research methodology that was used in this study. This cross-sectional, descriptive design was used to investigate the employer (sample) characteristics and explore the predictive relationship of attitude, centralization, interconnectedness, and business size to the presence of lactation support. Additionally, intent was explored as a potential moderator and relative advantage, complexity, trialability, and observability were examined as potential mediating factors to the presence of lactation support. The identification of participants, inclusion and exclusion criteria, survey distribution was described. Additionally, as this was an Internet-based survey, the challenges of this medium was outlined. The protection of human subjects, privacy and confidentiality of subjects were also described. Finally, a synopsis of the data analysis plan that described the survey participants, answered the research questions, and computed the internal consistency reliability of the instruments was described. Results are presented in Chapter Four.

CHAPTER FOUR: RESULTS

This chapter presents the quantitative results of the data analysis; data were analyzed using IBM SPSS Statistics version 19. The Business Characteristics Survey sought to gather business-specific information such as type of business (i.e. research and development, construction, or manufacturing, service), gender of survey-taker, number of employees, male-to-female ratio of employees, knowledge of any employees currently breastfeeding, and accommodations for employees that are currently breastfeeding. One of the inclusion criteria for this study was that the business fall under the USSBA's definition of a small business, one with less than 500 employees. These data are presented in response to research question one and two. Instrument reliability coefficients and instrument descriptives are described, as well as the association between many variables and breastfeeding support in the workplace. Hierarchical logistic regression models are described, which reveal whether knowledge of employees currently breastfeeding or knowledge of a similar size business was influential on the independent variables. The alpha was set for $p = .05$. Intent as a moderating variable was explored and the following mediating effects of the following were examined: relative advantage, complexity, trialability, and observability.

Table 4.1 shows the total responses prior to imputed values, Cronbach's alpha, mean, standard deviation, and range for the major study variables. Scale reliability was assessed on the modified subscales of the ESBQ. Table 4.1 shows the Cronbach's alpha for each subscale. A Cronbach's alpha and value of .7 or higher was considered an acceptable value. Internal consistency was above the acceptable values in the six subscales with the strongest being with the attitude subscale (.926). The lowest values

were with the centralization subscale (.787) and the complexity subscale (.771). Internal consistency was not performed on the Intent subscale, as it was limited to one item.

Table 4.1

Descriptive Statistics and Internal Consistency of ESBQ Subscales

Variable	*N*	Cronbach's α	*M*	*SD*	Range
Attitude	145	.926	22.46	3.878	11-25
Centralization	139	.787	23.17	5.365	7-30
Interconnectedness	139	.848	48.91	34.121	0-105
Intent	148	n/a	3.56	1.274	1-4
Relative Advantage	145	.881	72.50	24.044	4-100
Complexity	142	.771	9.40	3.585	3-15
Observability	146	.887	12.73	10.076	3-35

Fisher's Exact Test and chi squares were performed on several of the Business Characteristic variables to determine if there was a relationship between these variables and the outcome variable, presence of lactation support. Equal distribution among female (n = 76, 51.4%) and male respondents (n = 72, 48.6%) was noted; however, there was not a significant relationship between sex of the respondent and the presence of lactation support (X^2 (1) = 1.739, p = .187).

Table 4.2 shows the significance of the association between providing lactation support and the awareness of women currently breastfeeding in the respondents' place of business or by businesses of similar size or type providing lactation support. There is a statistically significant association between the presence of lactation support in the workplace and the awareness of women currently breastfeeding in the respondents' place of business (p = .002), awareness of other employers of similar size providing lactation support (p = .035). The association between awareness of other employers of a similar type

providing lactation support and the presence of lactation support in the workplace is approaching significance (p = .058).

Table 4.2

Awareness and Provision of Lactation Support

	Fisher's Exact Test 2-tailed *p*-value
Awareness of any women currently breastfeeding	.002
Awareness of other employers of similar size providing lactation support	.035
Awareness of employers of similar types providing lactation support	.058

The relationship between the presence of lactation support and the various types of benefits that may be offered by the employer are shown in Table 4.3. There is a significant relationship between the offering of health insurance (p = .006), sick leave (p = .003), and vacation time (p < .001) and the presence of lactation support in the workplace.

Table 4.3

Benefits Offered and Provision of Lactation Support

	X^2	*df*	*p*-value
Health Insurance	7.440	1	.006
Sick Leave	8.811	1	.003
Vacation Time	13.131	1	<.001
FMLA	.147	1	.701
Short Term Disability	.846	1	.358
Long Term Disability	3.303	1	.069

Research Questions

1. What is the proportion of workplace lactation programs in small businesses in Central Texas?

Frequencies described the presence, or lack thereof, of workplace lactation programs in small businesses in Central Texas. The outcome variable, presence of lactation support, was derived from the following survey items: designated room, permanent room, break time to pump breast milk, access to a certified lactation consultant, provision of breast pumps, and/or a policy and procedure to support the breastfeeding working mother in the workplace. A place to store milk was removed from the derivation, as the question did not differentiate between a dedicated refrigerator or shared with non-breastfeeding employees. The type of support provided by respondents was assessed and is described in Table 4.5. At least some type of breastfeeding support was provided by 65.5% of respondents (See Table 4.4).

Table 4.4

Frequency of Presence of Breastfeeding Support

	N	%
Yes	97	65.5
No	51	34.5

Table 4.5

Business Characteristics -- Support Provided

	n	%		*n*	%
Do you provide a designated private room/place to pump?			Do you provide a place to store breast milk?		
Yes	51	34.5	Yes	107	72.3
No	96	64.9	No	39	26.4
If yes, is the room designated as a permanent or "as needed" lactation room?			Do you provide break time for the employee to pump breast milk?		
Yes	27	54.0	Yes	94	63.5
No	23	46.0	No	50	33.8
Does the room/place have:					
A locking door or an "occupied sign?			Do you provide access to a certified lactation consultant?		
Yes	44	98.0	Yes	6	4.1
No	1	2.0	No	139	93.9
Access to clean, running water?			Do you provide breast pumps (sale or rent)?		
Yes	33	73.3	Yes	0	
No	12	26.6	No	145	98.0
An electrical outlet?			Do you have a Policy and Procedure for lactation support?		
Yes	45	100.0	Yes	13	8.8
No	*		No	134	90.5
A place to sit down?					
Yes	45	100.0			
No	*				
Good lighting and ventilation?					
Yes	45	100.0			
No	*				

Note: Numbers do not always total 148 because of missing data.
*All respondents answered "yes" to item.

2. What are the employer characteristics of small business in Central Texas who provide lactation support?

Frequencies described the employer characteristics of those small businesses in Central Texas that are providing workplace lactation programs. Table 4.6 presents the differences in business characteristics between those businesses who provide some type workplace lactation support in place and those that provide no support.

The categories of general nature of business were based on the SBA's DSSDB categories, with an "other" category as an additional option (see Table 4.6). For employers providing some type of lactation support, the largest share (47.4%) of businesses self-identified as "services." Respondents who responded "other" (28.9%) noted their business were medical, information technology, real estate, or consulting. The distinction of the general nature of the small business were similar for those respondents who did not provide some type of lactation support, with 43.1% describing their business as "services," 11.8% as "research and development," 9.8% as "construction," 5.9% as "manufacturing," and 29.4% as "other."

Sixty-seven percent of respondents that reported some type of lactation support self-identified as owners of the business; followed by 20.6% of respondents being managers and/or supervisors (see Table 4.6). Only six (6.2%) of respondents identified themselves as a Human Resources (HR) representative. Those that responded "other" and filled in the text box were Executive Directors, Chief Executive Officers (CEO), Chief Operating Officers (COO), Vice President of Operations, and Legal.

Table 4.6

Business Characteristics - Support Provided versus No Support Provided

	Businesses with some type of lactation support		Business with no lactation support	
	n	%	*n*	%
Total Responses	97	65.5	51	34.5
	M	*SD*	*M*	*SD*
Number of Female Employees	7.68	13.296	4.45	6.326
Childbearing Employees				
Age 18 to 24	1.41	2.485	.55	1.179
Age 25 to 35	3.31	4.813	2.37	4.772
Age 36 to 45	3.25	7.183	1.55	2.385
	Frequency (Yes Response)		Frequency (Yes Response)	
General Nature of Business				
Services	46	47.4	22	43.1
Research and Development	14	14.4	6	11.8
Construction	4	4.1	5	9.8
Manufacturing	5	5.2	3	5.9
Other	28	28.9	15	29.4
Position Held by Respondent				
Owner	65	67.0	31	60.8
Manager/Supervisor	20	20.6	11	21.6
HR Representative	6	6.2	2	3.9
Other	6	6.2	7	13.7
Benefits Offered to Employees				
Health Insurance	68	70.1	23	45.1
Vacation Time	87	89.7	34	66.7
Sick Leave	82	84.5	32	62.7
Short-term Disability	36	57.7	15	29.4
Long-term Disability	32	33.0	10	19.6
Access to FMLA	46	47.4	23	45.1

Benefits, such as health insurance, vacation time, sick leave, short-term disability and long-term disability, offered by employer respondents varied. A breakdown of benefits offered, including access to FMLA, is shown in Table 4.6.

Access to FMLA was evenly split among businesses who provided some type of lactation support, with 47.4% indicating that they participated in and offered FMLA. Of these businesses the number of women who accessed the FMLA ranged from zero to four. Eleven respondents indicated that at least one woman employed had accessed FMLA in the last 24 months; six responded that at least two women and one business responded that at least four women had accessed FMLA in the last 24 months.

Benefits offered by businesses that did not provide workplace lactation programs were reported less often, with health insurance offered by 45.1% of respondents. Approximately, 67% percent reported offering vacation time, 62.7% offering sick leave, 29.4% offering short-term disability, and 19.6% offering long-term disability. Regarding access to FMLA, there was no difference between small businesses that offer some type of lactation support and those that did not; 45.1% of small businesses who do not support breastfeeding in the workplace report providing access to FMLA compared to 47.4% mentioned above.

The number of female employees at the businesses ranged from zero to 67. Table 4.7 shows the age stratification of female employees among the business that responded to the survey.

Table 4.7

Business Characteristics -- Female Employees

	n	*M*	*SD*	Range
Number of Female Employees	97	7.68	13.296	0-67
Childbearing Employees				
Age 18 to 24	59	1.41	2.485	0-12
Age 25 to 35	77	3.31	4.813	0-30
Age 36 to 45	71	3.25	7.183	0-40

Awareness of breastfeeding in the workplace and by other business was also assessed (Table 4.8). The majority of respondents were not aware of any women in their workplace currently breastfeeding (79.4%), any employers of similar size providing lactation support (85.6%), or any employers of similar type providing lactation support (88.7%). Of the small business that did not provide some type of workplace lactation support, only one was aware of any women in their workplace currently breastfeeding and another (*n*=1) of any employers of similar size providing lactation support and/or any employers of similar type providing lactation support. None of the business surveyed were aware that Texas had a Mother Friendly Business Program.

Table 4.8

Breastfeeding Awareness of Respondents Who Provide Lactation Support

	n	%
Are you aware of any women currently working in your place of business that are currently breastfeeding/expressing milk?		
Yes	19	19.6
No	77	79.4
Are you aware of any employers of similar size providing lactation support to breastfeeding working mothers?		
Yes	13	13.4
No	83	85.6
Are you aware of any similar type of employers providing lactation support to breastfeeding working mothers?		
Yes	11	11.3
No	86	88.7

3. What is the predictive relationship among employer attitude, centralization, and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace?

Table 4.9 provides the outcomes of the independent and dependent variables for the sample. Controlling for knowledge of current breastfeeding employee(s) and knowledge of other same size businesses providing lactation support, attitude, centralization, and interconnectedness show no significant predictive relationship to the presence of lactation support in the workplace. Pooled results were utilized for data interpretation. While the independent variables did not show a significant relationship with providing lactation support in the workplace, for every unit increase in attitude there would be an expected increase of .034 in the log-odds of breastfeeding support in the workplace, holding all other independent variables constant. For every unit increase in centralization, there would be an expected increase of .045 in the log-odds of breastfeeding support in the workplace, holding all other independent variables constant. Likewise for every unit increase in interconnectedness, there is an expected increase of .002 in the log-odds of breastfeeding support in the workplace, holding all other independent variables constant. The averaged (as there is no pooled results produced by SPSS) Omnibus Tests of Model Coefficients show that the model had a good fit, ($X^2(5) = 20.57$, $p = .001$). These three independent variables accounted for 13.46% to 18.52% of the variance in the model.

Table 4.9

Logistic Regression for Independent and Dependent Variables (original and pooled data)

			95% C.I. for Exp(B)		
	B (SE)	*Exp(B)*	*LL*	*UL*	Sig.
Original Data					
Current Breastfeeding Employee(s) (control)	-2.461 (1.057)	.085	.011	.678	.020
Same Size Business Support (control)	-1.882 (1.089)	.152	.018	1.287	.084
Attitude	-.006 (.059)	.994	.886	1.115	.913
Centralization	.054 (.040)	1.056	.976	1.142	.175
Interconnectedness	.003 (.007)	1.003	.990	1.017	.661
Breastfeeding Support Provided (constant)	3.316 (1.917)	27.562	--	--	.084
Pooled Data (n=148)					
Current Breastfeeding Employee (s) (control)	-2.378 (1.051)	.093	.032	.265	.024
Same Size Business Support (control)	-1.839 (1.076)	.159	.022	1.138	.087
Attitude	.034 (0.054)	1.034	.930	1.150	.535
Centralization	.045 (.037)	1.046	.973	1.124	.222
Interconnectedness	.002 (.006)	1.002	.990	1.015	.695
Breastfeeding Support Provided (constant)	2.651 (1.870)	14.162	--	--	.156

Note = .82 (Hosmer & Lemeshow), .13(Cox & Snell R^2), .18 (Nagelkerke R^2). Model X^2 = 20.57, p =.001

Two cases had a standardized residual above an absolute value of three (1.3%) and a Cook's distance above one; however, these cases remained in the model as no significant influences in the results were noted when they were removed from the model. No multicollinearity was indicated in this model (tolerance statistics >0.1 and VIFs<10)

4. What is the predictive relationship between business size and the presence of lactation support in the workplace?

The number of employees reported by respondents ranged from zero to 244 employees (see Table 4.10). Those respondents who reported zero employees were left in the model, as there is the assumption that they could or would be willing to employ additional and/or female employees.

Table 4.10

Business Size

	N	*M*	*SD*	Range
Number of Employees	148	18.96	31.632	0-244

Logistic regression was used to explain the relationship between the independent variable (business size) and the dependent variable (presence of lactation support). Whether an employer offered health insurance benefits, sick leave, or vacation time was taken into consideration and entered as a covariate into the model. Overall the model appeared to be a good fit for the variables (X^2 (4) = 14.328, p = .006). This model accounted for 9% to 13% of the variance. The size of the business was not a significant predictor of the presence of lactation support in the workplace (p =.921), while holding

the three types of benefits constant. Table 4.11 provides the output for the independent variable, business size, and the dependent variable, presence of lactation support.

Table 4.11

Logistic Regression for Independent and Dependent Variable (n=145)

Variable	*B (SE)*	*Exp(B)*	95% C.I. for Exp(B) *LL*	*UL*	Sig.
Breastfeeding Support Provided (Constant)	1.112 (.300)*	3.040			<.001
Number of Employees (Size)	.001 (.007)	1.001	.987	1.014	.921
Health Insurance Offered	-.381 (.448)	.683	.284	1.643	.395
Vacation Time Offered	-1.172 (.759)	.310	.070	1.372	.123
Sick Leave Offered	-.259 (.653)	.772	.215	2.774	.691

Note R^2 = .36 (Hosmer & Lemeshow), .09 (Cox & Snell), .13 (Nagelkerke). Model X^2 = 14.328, p =.006. *p<.001.

No case had a standardized residual above an absolute value of 2 or a Cook's distance above one. No multicollinearity was indicated in this model (tolerance statistics >0.1 and VIFs<10).

5. What influence does intent to support breastfeeding in the workplace have on the presence of lactation support?

Looking at the raw data, of 65.5% businesses that reported having some type of workplace lactation program, the average intent score was 3.67. For the 34.5% of businesses who did not provide any type of lactation support, the average intent score on the subscale was 3.35. Overall, 54.7% rated their intent to support breastfeeding as "strong" or "very strong." Because of these results, the data showed a negative skewed distribution and a limitation of the study was revealed.

To answer the research question, the moderator of intent was added to the model and interaction terms created by multiplying intent with each of the following variables: business size, attitude, centralization, and interconnectedness. Each independent variable was tested separately, rather than forced into the model all at once. Additionally, analysis of the moderating variable of intent included transforming the zero point into the scale midpoint or neutral midpoint (Aguinis, 2004) of the predictor variables intent, attitude, and centralization to help eliminate any issues with multicollinearity and help make the moderator and intercept more interpretable, in addition to reducing the chance of multicollinearity (Lindley & Walker, 1993).

Prior to running the moderator analysis, correlations were conducted to assure that the independent variables (attitude, centralization, interconnectedness, and business size) did not correlate highly, suggesting the presence of multicollinearity. Bivariate analysis revealed a weak, negative relationship between business size and intent (r = -.166, p < .05). Original bivariate analysis revealed a positive relationship between the independent variable of attitude (centered) and intent (centered) (r = .645, p < .01), a positive relationship with centralization (centered) and intent (centered) (r =

.559, $p < .01$), and interconnectedness and intent ($r = .445$, $p < .01$). Post-imputation, pooled bivariate analysis revealed a positive relationship with the independent variable of attitude (centered) and intent (centered) ($r = .642$, $p < .01$), a positive relationship with centralization (centered) and intent (centered) ($r = .519$, $p < .01$), and interconnectedness and intent ($r = .463$, $p < .01$).

First the independent variable business size and the moderating variable, intent, were assessed to see if intent affects the strength and/or direction of the association between business size and presence of lactation support. This first block of the model does not include the interaction term, and thus ignores a possible moderating effect of intent. The omnibus test of model coefficients demonstrate that the model is a good predictor of lactation support ($X^2(5) = 15.537$, $p = .008$). However, the coefficients for intent and business size were not statistically significant at the $p < .05$ level, controlling for health insurance, sick leave, and vacation time. In this newest model for every one unit increase in business size, support is predicted to increase by .002 units ($b = .002$, $p = .804$). Additionally, there are no greater odds of the presence breastfeeding support based on the business size (OR 1.002 [.988, 1.015]), when controlling for intent, health insurance, sick leave, and vacation time.

After intent was multiplied by business size, the interaction term was entered into the equation and the omnibus test of model coefficients remained significant ($X^2(6) = 17.214$, $p = .009$). The coefficients resulted in a R^2 change of one percentage point (Cox and Snell = .11; Nagelkerke R = .16). Also, with the addition of the moderator, intent, every unit increase in business size, the presence of lactation support is expected to decrease in the log-odds for support by .008 units ($b = 008$, $p = .217$), holding intent and the other control variables constant. The odds of the presence of lactation support

did not increase with the addition of the modifying variable, intent (OR .992 [.981, 1.004]). These results do not support the presence of a moderating effect of intent on business size. No issues with outliers or multicollinearity were noted.

The next independent variable to be tested with the moderator, intent (centered), was attitude (centered). This first block of the model does not include the interaction term, and thus ignores a possible moderating effect of intent. The omnibus test of model coefficients for the imputed data reveal that the model is a good fit, (X^2 (4) = 19.124, p = .001). The coefficients for intent (centered) and attitude (centered) are not statistically significant at the $p < .05$ level. Pooled data show that for every unit increase in attitude, breastfeeding support in the workplace is expected to increase, holding intent and the other control variables (knowledge of current breastfeeding employee and knowledge of other same size businesses) constant (b =.072, p = .236). There are no greater odds of the presence of lactation support given attitude (OR 1.074, [.954, 1.210]).

After intent (centered) was multiplied by attitude (centered), the interaction term was entered into the equation and the omnibus test of model coefficients suggests that the model remains significant (X^2 (5) = 13.312, p = .001). The coefficients resulted in little change of R^2 (Cox and Snell = .12; Nagelkerke R = .17). With the addition of the moderator, intent (centered), every unit increase in attitude (centered), the presence of lactation support in the workplace is expected to increase in the log-odds for support, holding all other variables constant (b = .017, p = .669). The odds of the presence of lactation support did not change by adding intent (centered) to the model as a potential moderator (OR 1.018, [.940, 1.102]). These results do not support the presence of a moderating effect.

Multicollinearity for attitude and intent were tested as well to assure that no issues existed; it was noted that the tolerance statistic was less than .1 and the VIF was greater than 10, suggesting multicollinearity. Additionally, two outliers were noted with an inflated Cooks (>1) and Standardized residual (>3).

The third independent variable to be tested with the moderator, intent (centered), was centralization (centered). As previously mentioned, the two variables were centered prior to analysis. This first block of the model does not include the interaction term, and thus ignores a possible moderating effect of intent. The omnibus test of model coefficients for the imputed data reveal that the model is a good fit, (X^2 (4) = 19.312, p = .002). The coefficients for intent (centered) and centralization (centered) are not statistically significant at the p < .05 level. Pooled data show that for every unit increase in centralization, breastfeeding support in the workplace is expected to increase, holding intent and the other control variables (knowledge of current breastfeeding employee and knowledge of other same size businesses) constant (b = .058, p = .136). There are no greater odds of the presence of lactation support given attitude (OR 1.060, [.982, 1.682]).

After intent (centered) was multiplied by centralization (centered), the interaction term was entered into the equation and the omnibus test of model coefficients suggests that the model remains significant (X^2 (5) = 20.175, p = 0.001). The coefficients resulted in little change of R^2 (Cox and Snell = .13; Nagelkerke R = .18). With the addition of the moderator, intent (centered), every unit increase in centralization (centered), the presence of lactation support is expected to increase in the log-odds for support, holding all other variables constant (b = .016, p = .554). The odds of the presence of lactation support did not change by adding intent (centered) to the model as a potential moderator

(OR 1.016, [.965, 1.070]). These results do not support the presence of a moderating effect.

Multicollinearity for centralization and intent were tested as well to assure that no issues existed; it was noted that the tolerance statistic was greater than .1 and the VIF was less than 10. Two outliers were noted with an inflated Cooks (>1) and Standardized residual (>3).

The fourth and final independent variable to be tested with the moderator, intent, was interconnectedness. Since the variable of interconnectedness is scored from zero to 75, it and the moderating variable intent were not centered. This first block of the model does not include the interaction term, and thus ignores a possible moderating effect of intent. The omnibus test of model coefficients for the imputed data reveal that the model is a good fit, (X^2 (4) = 18.213, p = .001). The coefficients for intent and interconnectedness are not statistically significant at the $p < .05$ level. The pooled data show that for every unit increase in interconnectedness, the presence of lactation support is expected to increase, holding intent and the other control variables constant (b = .005, p = .379). There are no greater odds of the presence of lactation support given interconnectedness (OR 1.005, [.993, 1.018]).

After intent was multiplied by interconnectedness, the interaction term was entered into the equation and the omnibus test of model coefficients suggests that the model remains significant (X^2 (5) = 18.3245, p = .02). The coefficients resulted in little change of R^2 (Cox and Snell = .12; Nagelkerke R = .16). With the addition of the moderator, intent, every unit increase in interconnectedness, the presence of lactation support does not show any change in the log-odds (p = .853), holding all other variables constant. The odds of the presence of lactation support did not change by adding intent

to the model as a potential moderator (OR 1.001, [.991, 1.011]). These results do not support the presence of a moderating effect.

Multicollinearity for intent and interconnectedness were tested as well to assure that no issues existed. It was noted that the tolerance statistic was less than .1 and the VIF was greater than 10. Additionally, two outliers were noted with an inflated Cooks (>1) and Standardized residual (>3).

Influence of Mediating Variables

Previously, it was proposed that four mediating variables (relative advantage, complexity, trialability, and observability) were to be explored to determine if they are a substantive and significant part of the relationship between the independent variables and the dependent variables. Only three of the potential mediating variables, relative advantage, complexity and observability were explored; trialability was determined to not be a viable mediating variable for the model. Prior to testing for mediator effects, the relationship between each independent variable (attitude, centralization, interconnectedness, and business size,) and the outcome variable (presence of lactation support) were tested. Bennett (2000) states that a significant direct effect between the independent variable and the outcome variable must be present to test for a mediator effect. Table 4.12 shows the significant testing for each independent variable without any of the previously described control variables.

Table 4.12

Significance Testing for Independent Variables and Presence of Lactation Support

	B (SE)	*Exp(B)*	Sig.
Business Size	.004 (.006)	1.004	.540
Attitude (centered)	.088 (.044)	1.092	.045
Centralization (centered)	.063 (.032)	1.064	.054
Interconnectedness	.249 (.295)	1.282	.109

Only one of the four independent variables, attitude, showed a significant direct association with the outcome variable of presence of lactation support. Centralization was approaching significance and the remaining two, business size and interconnectedness showed no significant direct association. Based on the data, mediator effects were only tested with attitude.

Testing for mediating effects requires the testing of three equations (Bennett, 2000; Lindley & Walker, 1993). For the independent variable, attitude, the centered scores were utilized. Additionally, the centered scores for the mediator variables, relative advantage, complexity, and observability were used for the testing. Analysis of the mediating variables included transforming the zero point into the scale midpoint or neutral midpoint (Aguinis, 2004) of the predictor variables, attitude, to help eliminate any issues with multicollinearity and help make the moderator and intercept more interpretable, in addition to reducing the chance of multicollinearity (Lindley & Walker, 1993).

The first, the independent variable, attitude (centered), and the first mediating variable, relative advantage (centered), were tested (See Figure 4). Attitude appears to be a significant predictor of relative advantage (b = 4.583, p <.001). The second step is to test the significance of the association between attitude and the presence of lactation

support. As previously demonstrated, there is a significant direct association between this independent variable and the outcome variable (p = .045). The final and third step is to simultaneously enter the independent variable, attitude and the mediator variable, relative advantage with the outcome variable (Bennett, 2000). At this step relative advantage, while controlling for attitude, was not a significant predictor of presence of lactation support (b = .013, p = .220); however, the direct relationship of attitude to the outcome variable, presence of lactation support was less significant than in the previous test (b = .029, p = .655). A final step was running a Sobel test to determine the indirect effects of the independent variable, attitude, to the outcome variable, presence of lactation support via the mediating variable, relative advantage. No indirect effects were noted (z = 1.177, p = 0.239).

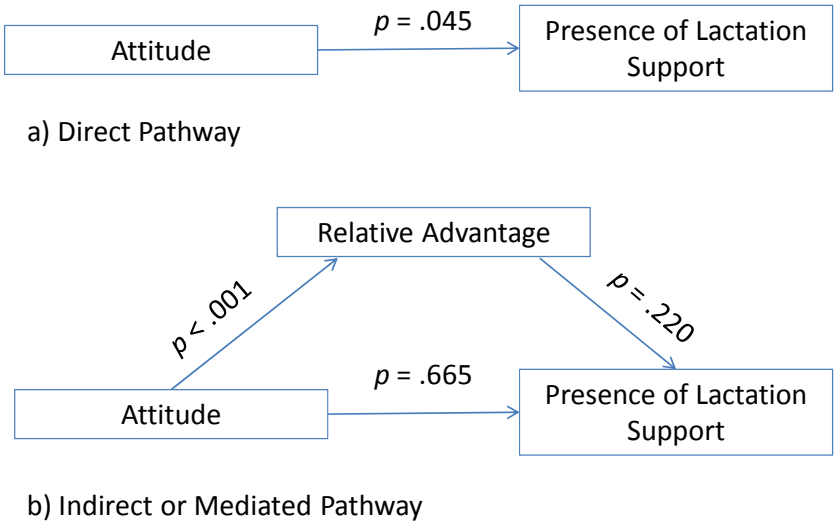

Figure 4. Mediation Model for Attitude and Relative Advantage

Next, the independent variable, attitude (centered), and the second mediating variable, complexity (centered), were tested (See Figure 5). Attitude appears to be a significant predictor of complexity (b = .407, p <.001). The second step is to test the significance of the association between attitude and the presence of lactation support. As previously demonstrated, there is a significant direct association between this independent variable and the outcome variable (p = .045). The final and third step is to simultaneously enter the independent variable, attitude and the mediator variable, complexity with the outcome variable (Bennett, 2000). At this step complexity, while controlling for attitude, was not a significant predictor of presence of lactation support (b = .059, p = .285); however, the direct relationship of attitude to the outcome variable, presence of lactation support was less significant than in the previous test (b = .065, p = .181). A final step was running a Sobel test to determine the indirect effects of the independent variable independent variable, attitude, to the outcome variable, presence of lactation support via the mediating variable, complexity. No indirect effects were noted (z = 1.055, p = 0.291).

Finally, the independent variable, attitude (centered), and the third mediating variable, observability (centered), were tested (See Figure 6). Attitude appears to be a significant predictor of observability (b = .916, p = .003). The second step is to test the significance of the association between attitude and the presence of lactation support. As previously demonstrated, there is a significant direct association between this independent variable and the outcome variable (p = .045). The final and third step is to simultaneously enter the independent variable, attitude and the mediator variable, observability with the outcome variable (Bennett, 2000). At this step observability,

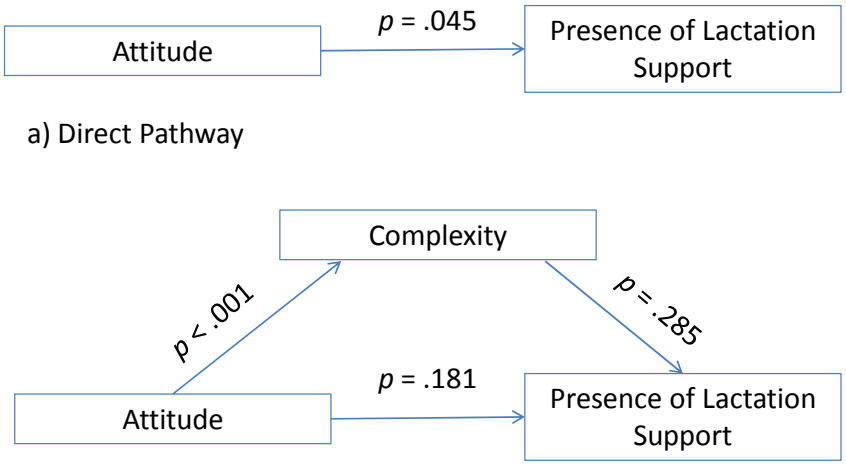

Figure 5. Mediation Model for Attitude and Complexity

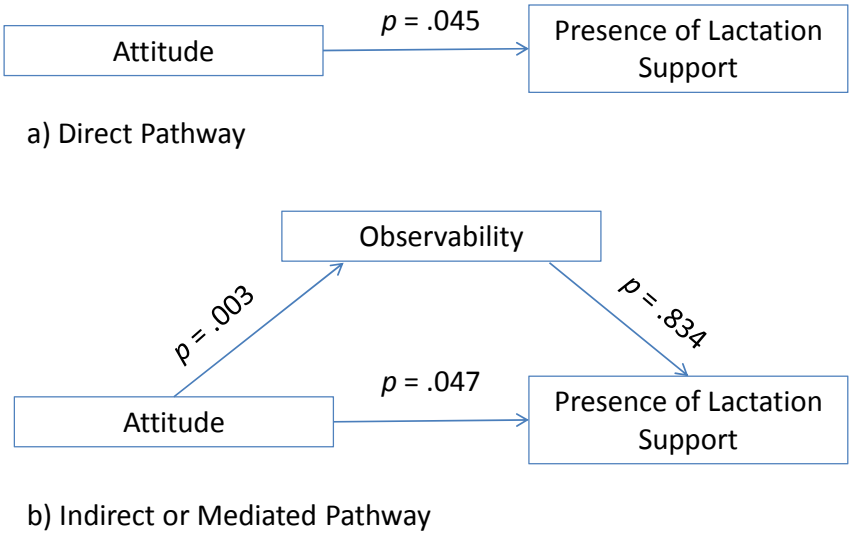

Figure 6. Mediation Model for Attitude and Observability

while controlling for attitude, was not a significant predictor of presence of lactation support (b = -.003, p = .834); however, the direct relationship of attitude to the outcome variable, presence of lactation support was less significant than in the previous test (b = .091, p = .047). A final step was running a Sobel test to determine the indirect effects of the independent variable independent variable, attitude, to the outcome variable, presence of lactation support via the mediating variable, observability. No indirect effects were noted (z = -0.249, p = 0.803).

Chapter Summary

This chapter presented the results of the Internet-based survey that assessed the presence of lactation support for small business in Central Texas. This study determined the relationship between attitude, centralization, observability, business size, and presence of lactation support. Descriptive statistics were computed regarding the presence of lactation support and the characteristics of the businesses that responded to the online survey. Prior to the testing of the predictive relationship of business size, attitude, centralization, and observability, Fisher's Exact Tests and Chi Square tests were performed on several of the Business Characteristic variables to determine if there was a relationship between variables and the presence of lactation support. Significant relationships were found between presence of lactation support and awareness of any women currently breastfeeding, awareness of other employers of similar size providing lactation support and if a business provides health insurance, sick leave, and vacation time. Logistic regression analyses were used to estimate the likelihood of lactation support based on attitude, centralization, interconnectedness, and business size. Finally, the influence of intent, a potential moderating variable, and three mediating variables (relative advantage, complexity, and observability) were explored. Intent was

not found to be a significant moderating variable and relative advantage, complexity and observability were not found to be significant mediating variables.

CHAPTER FIVE: DISCUSSION

This chapter summarized the main aspects of the study and findings. It also describes the findings within the context of the limited amount of existent literature. The appropriateness and usefulness of the Diffusion of Innovation Theory (DOI) (Rogers, 2003) in explaining small business employers intent to support breastfeeding in the workplace is discussed. Limitations of the study, as well as the implications of the findings and the recommendations for nursing practice and research are presented.

Summary of Study

The purpose of this cross-sectional study was to explore the relationships between attitudes and intent to support breastfeeding in the workplace of small businesses in Central Texas. A modified version of the DOI theory guided the study.

The small businesses that participated in this study must have met the USSBA's criteria of less than 500 employees (USSBA, 2009). A list of potential participants (*N* = 3,817) were downloaded from the USSBA's Dynamic Small Business database. Prior to sending the survey, a notification was sent to all potential participants to alert them of the upcoming email request and ask that they please complete the survey. Several attempts were made to recontact the potential participants and additional email contact was made to those participants that did not complete the survey in it's entirely. After consent was obtained, participants completed a 66-item survey that assessed the characteristics of the business and the respondents' attitudes and intent to support breastfeeding in the workplace. Final sample size was 148, resulting in a 3.8% response rate.

Data were analyzed using IBM SPSS Statistics version 19. Fully conditional specification imputations were used to replace missing values. Descriptive data were

run based on the survey items from the Business Characteristics Survey. Business size was assessed using the Business Characteristics Survey. Data for the constructs within the DOI (attitude, centralization, and interconnectedness) were gathered using the Employer Intention to Support Breastfeeding Questionnaire (ESBQ) (Rojjanasrirat et al., 2010). The influence of one modifier, intent, was analyzed to determine its effect on the direction or strength on the relationship between the independent variables (attitude, centralization, interconnectedness, and business size) and the dependent variable (presence of lactation support). Finally, three mediators (relative advantage, complexity, and observability) were explored to determine their influence on the dependent variable.

Sixty-five percent of respondents provided some type of lactation support, defined in this study as a designated room, permanent room, break time to pump breast milk, access to a certified lactation consultant, provision of breast pumps, and/or a policy and procedure to support the breastfeeding working mother in the workplace. The characteristics of businesses that provided workplace lactation programs varied; however, most offered benefits to their employees, including health insurance, vacation time, sick leave and access to FMLA. On average, respondent's reported seven female employees with some percentage (M = 1.41-3.31) of those within childbearing years.

Controlling for knowledge of current breastfeeding employee(s) and knowledge of other same size businesses, attitude (p = .535), centralization (p = .222), and interconnectedness (p = .695), constructs in DOI, show no significant predictive relationship to the presence of lactation support in the workplace. Controlling for the types of benefits offered (i.e. health insurance, vacation time, and sick leave) the number of employees (p = .921) did not show a significant predictive relationship to the presence of lactation support in the workplace.

The influence of one moderator, intent, was explored to determine its affect on the strength and/or direction of the relationships between the independent variables (attitude, centralization, interconnectedness, and business size). Prior to analysis, those independent variables that did not have a meaningful zero (attitude and centralization) and the moderator variable, intent, were centered. The results did not support the presence of a moderating effect.

Finally, three mediating variables (relative advantage, complexity, and observability) were explored to determine if they were a substantive and significant part of the relationship between the independent (attitude, centralization, interconnectedness, and business size) and dependent variable (presence of lactation support). Only one independent variable, attitude (p = .045), met the assumption that a significant relationship exists between the independent and dependent variable for the testing of mediating variables. Attitude was tested with the three proposed mediating variables and no mediating effects were found. Sobel tests were then conducted to determine the indirect effects of the independent variable (attitude) to the outcome variable (presence of lactation support) via the mediating variables (relative advantage, complexity, and observability).

Discussion of Findings

Research Question One

What is the proportion of workplace lactation programs in small businesses in Central Texas?

The first research question explored the presence of workplace lactation programs in Central Texas. Of the respondents (N = 148) 65.5%, provided at least some type of breastfeeding support. Support varied from the provision of a designated

private room/place to pump, break time to pump, access to a certified lactation consultant, and/or policy and procedures to support the breastfeeding mother. Bar-Yam (1997) classified workplace lactation support into four levels: lactation program, lactation support, lactation awareness, and no lactation support. Of the employers that provided lactation support the majority (63.5%) provided break time for the employee to pump breast milk; however, only 34.5% provided a designated private room/place to pump. Employers who provided a private room/place to pump reported that they had an electrical outlet and a place to sit down, but many (26.6%) did not have access to clean, running water. Very few, 4.1% provided access to a certified lactation consultant or had policies in place to support the breastfeeding working mother. These results suggest that many employers provide breastfeeding support to their breastfeeding working mothers on a case-by-case basis.

The findings and the discussion of the proportion of workplace lactation programs should be accepted cautiously because of the potential self selection of respondents, which will be discussed later in the chapter, as this appears to have influenced the high rate of reported workplace lactation programs.

The proportion of workplace lactation program in this study is above the Healthy People 2020 goal (2011a) of 38% of employers reporting an on-site lactation/mother's room. Rates specific to the Central Texas area are not available and the high proportion rate is contrary to the literature. Themes that emerged in the Dunn et al. (2004) study was breastfeeding as a matter of personal choice and not a matter of employer responsibility. They also found that there are significant differences in work-site breastfeeding support between large, medium, and small businesses; 75% of small businesses provide flextime, job sharing, or part-time employment options. The small

businesses surveyed (*n* = 44) reported allowing for breaks for collecting breast milk (63.9%), providing a private area to breastfeed or express milk other than a bathroom (41.7%), and providing the option of extended maternity leave without loss of job status (53.1%) (Dunn et al., 2004). However, only 2.9% of small business reported specific written policies regarding work-site breastfeeding support (Dunn et al., 2004). Another study found positive support for breastfeeding in the workplace by employers who participated in their survey but were only providing support on an "as needed" basis and none had breastfeeding support policies (Brown et al.,1997). Libbus and Bullock (2002) found that 71% of employers indicated they would support the breastfeeding mother.

Research Question Two

What are the employer characteristics (size, number of employees, type of business) of small businesses in Central Texas who provide lactation support?

The small business employers that responded to the email survey varied in size and scope of business. Of the 97 respondents that reported having some type of lactation support, the average number of female employees was 7.68 (*SD* 13.296), with most having at least one female employee in the childbearing years (age 18-45).

The types of businesses self-identified in the SBA categories of "Services," "Research and Development," "Construction," and "Manufacturing." An additional 28 participants identified as "Other" and described their business as medical, information technology, real estate, or consulting. Participants were asked to identify what position they held with the company: "Owner," "Manager/Supervisor," "HR Representative" or "Other." Sixty-seven percent of the respondents self-identified as owners of the business; 20.6% identified themselves as managers and/or supervisors. "Other"

described themselves as Executive Directors, Chief Executive Officer (CEO), Chief Operating Officers (COO), Vice President of Operations, or Legal.

Because benefit packages can vary among small business, so the types of benefits offered to employees were assessed. Overall, most respondents offered some type of benefit: health insurance, vacation time, sick leave, short-term disability, long-term disability and/or access to FMLA. The majority of employers offered health insurance (70.1%), vacation time (89.7%) or sick leave (84.5%). Dunn et al. (2004) reported that 84.7% of their employers in their survey offered paid or unpaid maternity leave of at least three months.

Small businesses that provide some type of lactation support reported a higher frequency of awareness of any women in their workplace currently breastfeeding and knowledge of employers of similar size and similar type providing lactation support. These findings are similar to the literature that employers who knew of other business that supported breastfeeding working mothers reported significantly higher levels of breastfeeding support (Bridges et al., 1997).

Only a few studies exist on the characteristics of businesses that provide lactation support, though no results are specific to the State of Texas.

Research Question Three

What is the predictive relationship among employer attitude, centralization, and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace?

Research question three explored the predictive relationship between employer attitude, centralization and interconnectedness toward breastfeeding support in the workplace and the presence of lactation support in the workplace. A modified Diffusion

of Innovation theory hypothesized that centralization, or the power and control that is concentrated to a few individuals, would have a negative influence on the presence of lactation support, while interconnectedness, or the degree that units in a social system are linked by interpersonal networks, would have a positive influence on the outcome variable. Attitude was predicted to have either a positive or negative influence on the presence of lactation support. Controlling for the employers' awareness of women currently breastfeeding and awareness of other employers of similar size providing lactation support, the three pooled independent variables showed no statistical significance; therefore, there is no predictive relationship between attitude, centralization and interconnectedness and the presence of lactation support.

The analysis of attitude reveals that there is a positive association, or unit change, toward the outcome variable. Additionally, as the attitude score increased, the odds that the employer has a lactation support program, controlling for all other independent variables, increased. As noted in Chapter Two there is little known in the literature about how the attitude of small business owners would affect the presence of lactation support in their small businesses. Results in the literature were mixed; businesses see the value of breastfeeding, but do not recognize their role in breastfeeding support or the benefit to the business itself (Bridges et al., 1997; Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002; Witters-Green, 2003). One study found that 35% of employers were willing to facilitate breastfeeding in the workplace, but only 18-35% of employers saw the value in promoting breastfeeding in the workplace (Libbus & Bullock, 2002). In this survey, the attitudes of the respondents toward breastfeeding in the workplace scored high on the attitude subscale, with a range from (1) *very negative* to (5) *very positive*; therefore, a positive relationship was expected.

Overall, responses reflected a positive attitude toward providing lactation support, such that 75.6% of small business employers felt that providing lactation support was "somewhat necessary" or "necessary"; 87.8% felt that providing lactation support was "somewhat not embarrassing" or "not embarrassing"; 86.5% felt that providing lactation support was "somewhat positive" or "positive"; 82.5% felt that providing support for breastfeeding mothers was "somewhat important" or "important," and; 80.4% felt that providing lactation support was "somewhat beneficial" or "beneficial."

One study utilized the DOI theory for an employee wellness program around obesity prevention (Gates et al., 2006). The researchers found that the attitudes of managers and employees influenced the success of the wellness program in general.

Centralization, or the concentration of power and control (Rogers, 2003), did not have the negative relationship to the presence of lactation support that was hypothesized; rather the coefficient shows a positive direction. As mentioned in Chapter Two, there is a gap in the literature regarding the concentration of power and control and breastfeeding support. In this study, centralization appears to positively influence the presence of lactation support. Business characteristic data revealed that most respondents (65%) were owners of the business, suggesting that the power and control lies with them; therefore, rejecting the hypothesis that the concentration of power and control has a negative effect on the presence of lactation support in the workplace. Again, there is a gap in the literature regarding centralization, or the concentration of power and control, and breastfeeding support in the workplace. In this survey, 71.6% of respondents "strongly disagreed" or "disagreed" with the statement "The decision to carry out the activities necessary to provide support for the breastfeeding working mother is beyond my control and 73.4% responded "strongly agree" or "agree" that

whether they provide support to the breastfeeding working mother is entirely their decision.

In the previously mentioned obesity study (Gates et al., 2006), centralization was a DOI construct utilized in the program development. Centralization was an obvious factor that influenced the development of focus group topics, as the researchers initially met with Human Resources Directors to establish feasible interventions for the work environments.

For interconnectedness, or the degree units in a social system are linked by interpersonal networks (Rogers, 2003), there is an expected increase in the log-odds of breastfeeding support in the workplace, holding all other independent variables constant (attitude and centralization), supporting the idea that interconnectedness has a positive predictive relationship, though very small, with the presence of lactation support. There is very little research on interconnectedness or the degree to which social referents think that the respondent should support breastfeeding. However, the literature reports that employers who knew of other businesses that supported breastfeeding working mothers reported significantly higher levels or breastfeeding support (Bridges et al., 1997). In this survey, the awareness of other employers of similar size providing lactation support was assessed in the Business Characteristics Survey and utilized as a control variable. Other items that measured interconnectedness in the survey assessed if the respondent thought that he/she should provide support for breastfeeding working mothers from the perspectives of the head of the organization (33.1%), other supervisors (37.2%), their employees (37.8%), and other colleagues (33.8%).

Research Question Four

What is the predictive relationship between business size and the presence of lactation support in the workplace?

Question four sought to explore the predictive relationship between business size and the presence of lactation support. Survey participant business size ranged from zero to 244. It was hypothesized that the size of the business would positively influence the presence of lactation support. The larger the business, the more likely breastfeeding mothers will be provided support. Small business may lack the space, financial resources, and/or staff to support a breastfeeding working mother or a workplace lactation program. While not a statistically significant predictor of the presence of lactation support in this study, business size did show a positive, predictive relationship, while controlling for benefits offered (health insurance, vacation time and sick time). There are no current data on the predictive relationship of business size and presence of workplace lactation support; however, Dunn et al. (2004) found that there are significant differences in work-site breastfeeding support between large, medium, and small businesses; 75% of small businesses provide flextime, job sharing, or part-time employment options, compared to 59% of medium-sized businesses and 88.1% of large businesses.

Research Question Five

What influence does intent to support breastfeeding in the workplace have on the presence of lactation support?

The Theory of Reasoned Action contends that the most important determinant of behavior is a person's behavioral intention (Montano & Kasprzyk, 2002). In this study, intent was theorized to be a moderator, or an independent variable that impacts the

strength and/or direction of the association between other independent variables (attitude, centralization, interconnectedness, and business size) and the outcome variable, presence of lactation support (Bennett, 2000). Intent has the potential to influence the relationships between the independent variables and the dependent variable, positive or negative; however, this direction was unknown at the start of the study. A positive direction with the coefficient was present with size (*b* = .008), attitude (*b* =.017), centralization (*b* = .016), and interconnectedness (*b* = .001). Due to the homogenous nature of the sample, detection of a moderator effect of intent on the presence of lactation support may have been weakened (Bennett, 2000). Further analysis of those 51 (34.46%) respondents who did not report some type of lactation support, only 24 (47.0%) rated their intent to support breastfeeding in the workplace as "strong" or "very strong." This finding is similar to Dunn et al. (2004), who found that businesses reporting no breastfeeding support services also had a low response rate to incentives for providing such service, indicating a lack of perceived need or intent.

Libbus and Bullock (2002) observed that 71% of their participants would support a woman who wants to breastfeed in the workplace; however, only 35% reported that they would change the work environment to allow breastfeeding in the workplace. Bridges et al. (1997) had lower results for an employers' intent to support breastfeeding in the workplace, with only 17% of employers responding that they indicating that they “strongly agree” or “agree” to supporting an employed women who wanted to nurse her infant or express milk in the workplace. Thirty-six percent did not agree that the work environment should be changed to allow women to nurse (Bridges et al., 1997).

Mediating Variables

The DOI describes relative advantage, complexity, and observability as independent variables related to organizational innovativeness (Rogers, 2003). However, the mediating effect of these variables (relative advantage, complexity and observability) were explored to see if they included a substantive and significant effect on the relationships among the independent variables (business size, attitude, centralization, interconnectedness). As noted in Chapter Two, relative advantage was theorized as having a positive influence in the relationship, complexity would have a negative influence, and observability could have a positive or negative influence on the relationship between the independent variables (attitude, centralization, observability, and business size) and the dependent variable (presence of lactation support). Again, Bennett (2000) indicates that unless there is a significant relationship between the independent variable and the outcome variable, mediating variables should not be tested. As a result, the mediating variables (relative advantage, complexity, and observability) were only tested with the independent variable, attitude (p = .045). Of the three mediating variables, none were found to contribute significantly to the relationship between attitude and the presence of a workplace lactation program. For mediation to occur, the independent variable (attitude) should significantly affect the mediator (relative advantage, complexity, or observability), the independent variable (attitude) should significantly affect the outcome variable (presence of lactation support) in the absence of the mediator, and the mediator should have a significant unique effect on the outcome variable, such that the strength of the effect of the independent variable should shrink when adding the mediator to the model (Baron & Kenny, 1986; Bennett, 2000; Preacher & Hayes, 2004; Preacher & Leonardelli, 2010).

For the first mediator, relative advantage, and the independent variable attitude, the assumptions were met for the independent variable significantly affecting the mediator ($p < .001$) and attitude significantly affecting the outcome variable ($p = .045$); however, upon the simultaneous input of attitude and relative advantage to the dependent variable, significance was lost. Though the direct relationship of attitude to the outcome variable was less significant than before ($p = .655$), relative advantage failed to be a significant predictor of the presence of lactation support ($p = .220$). The Sobel test suggests no indirect effect of the independent variable, attitude, on the dependent variable or the presence of workplace lactation programs via the mediator, relative advantage.

The literature reflects that some employers have realized the relative advantage of promoting and supporting breastfeeding in the workplace; however, these employers appear to be outnumbered by those that see no advantage for offering lactation support for the business itself. Libbus and Bullock (2004) reported that while only 15% of their participants thought that allowing mothers to breastfeed in the workplace would interfere with productivity, only 25% thought that supporting breastfeeding in the workplace would decrease absenteeism. Only 22% believed that supporting breastfeeding in the workplace would decrease turnover rate (Libbus & Bullock, 2004). Bridges et al. (1997) reported similar results in regards to absenteeism and turnover rates, with only 23% of employers reporting that allowing breastfeeding in the workplace would decrease absenteeism and turnover.

Participants in these two studies also did not see breastfeeding in the workplace as a way to positively impact recruiting efforts (Bridges et al., 1997; Libbus & Bullock, 2004). These employers did not realize the relative advantage of workplace lactation

support. In contrast, the findings of this survey note that relative advantage was recognized by respondents. Eighty-three percent of respondents recognized that by providing support the breastfeeding working mother will feel satisfied with her role as a worker and mother who contributes to her family. Also, 71.6% responded that the breastfeeding working mother is able to get her work done, indicative that there is little to no decrease in productivity with the provision of breastfeeding support. Only 49.3% of respondents believed that by providing support to the breastfeeding working mother would decrease turnover rate among employees; however, 73% responded that providing support to a breastfeeding working mother the baby would have fewer illnesses, decreasing employee absenteeism.

The second mediator, complexity, showed similar results. The assumptions were met for attitude significantly impacting the mediator, complexity ($p < .001$), and attitude significantly impacting the outcome variable ($p = .045$); however, upon the simultaneous input of attitude and complexity to the dependent variable, significance was lost. Though the direct relationship of attitude to the outcome variable was less significant than before ($p = .181$), complexity failed to be a significant predictor of the presence of lactation support ($p = .285$). The Sobel test suggests no indirect effect of the independent variable, attitude, on the dependent variable or the presence of workplace lactation programs via the mediator, complexity.

There is a gap in the literature in regards to the influence of complexity on the implementation and presence of workplace lactation programs. However, employers believe that they lack the monetary and personnel resources to plan and implement wellness programs (Gates et al., 2006). Respondents in this survey had mixed results for the items that assessed complexity. Sixty-two percent indicated that they could find

time to provide resources, such as information, a room, and break time, to each breastfeeding mother and 55.4% indicted that they could find time to praise and encourage each breastfeeding working mother's efforts. However, only 18.2% felts they could access equipment, such as breast pumps, when necessary. Complexity was a guiding construct for the Gates et al. (2006) study that utilized the DOI theory for an employee wellness program for obesity prevention.

The third and final mediator, observability showed similar results as the first two mediators. The assumptions were met for attitude significantly impacting the mediator, observability (p = .003) and attitude significantly impacting the outcome variable (p = .045); however, upon the simultaneous input of attitude and observability to the dependent variable, significance was lost. The direct relationship of attitude to the outcome variable was less significant than before (p = .047), observability failed to be a significant predictor of the presence of lactation support (p = .834). The Sobel test suggests no indirect effect of the independent variable, attitude, on the dependent variable or the presence of workplace lactation programs via the mediator, observability.

Observability was not perceived to have a negative effect on pubic image in the Libbus and Bullock (2004) study. Only 4% of participants reported that allowing mothers to breastfeeding in the workplace would have a negative effect on the public image of the business. However, 45% of employers in the Bridges et al. (1997) study felt that there would be a negative impact. In this survey, recognition for time and efforts from employees and from the public were not important to the respondents. Only 21.6% believed it was important to receive recognition from the public and even fewer, 19.6%, believed it was important to receive recognition from employees.

As the data analysis for mediators was being conducted, trialability was not found to be a viable mediator. The first item proposed to assess this mediating variable ("Are you aware of any women currently working in your place of business and breastfeeding/expressing breast milk") was utilized as a control variable in research question three. The second item proposed to assess trialability ("Do you provide any of the following for your breastfeeding employees" followed with a question regarding a designated private room/place to pump and if provided, is the room is designated as permanent or on an "as needed" basis) was utilized as a portion of the outcome variable.

No literature could be found that utilized the DOI theory for the planning, implementation, and evaluation of workplace lactation programs; however, there are few studies that have evaluated the effectiveness of workplace lactation programs. Though primarily large business employers, these businesses have recognized the benefits of offering some part of lactation support programs for their business. Employer intent and attitude are positive, complexity is a non-issue, and the relative advantage realized by these businesses. By providing workplace lactation programs, employers are facilitating continued breastfeeding upon a woman's return to work following childbirth.

Limitations of the Study

Due to the limitations of this study described below, interpretation and generalizability of the data should proceed with caution. Limitations of the study include the convenience sample of small business employers from the USSBA, use of a use of an Internet-based survey, low response rates, missing data, and self-selection of participants. Some of these limitations were anticipated during the design phases, such as the potential for low response rates; however, the majority was unforeseen.

The convenience sample of small businesses in the Central Texas area (Bexar, Travis, Hays, and Williamson counties) limit the generalizability of the study across the State of Texas. Central Texas is unique, in that some cities are perceived as more innovative and progressive towards breastfeeding when compared to other parts of the State. Responses from areas such as Houston, Dallas, and El Paso may have varied from those of Central Texas.

The use of the USSBA as a source for potential respondents also limits the generalizability of this study. As mentioned in Chapter Three, those businesses who wish to do business with the Federal government must be registered in the CCR; there is no cost to the business to be registered with the USSBA CCR. Additional certifications are available for small businesses through the USSBA, if they qualify, including HUBZone, and 8(a) certifications, both of which require an application to the USSBA. The only businesses that were selected to receive this survey were those businesses that were registered with the Dynamic Business Search database. This excluded any businesses that do not intend to do business with the Federal Government or apply for HUBZone or 8(a) certification, such as chain fast food restaurants or gas stations, where childbearing women may be employed. Therefore, a true representation of the small business population in Central Texas was not captured.

The use of an Internet-based survey was a limitation of this study. In addition to the limitation previously described, any small businesses that did not have a computer or a contact email address listed in the USSBA were not included in the potential participant list. Originally, it was posited that the ease of completing an Internet-based survey would be favorable; however, this assumption was quickly invalidated. No paper surveys were mailed to potential participants from the USSBA. Therefore, any survey

that was returned as undeliverable was not re-forwarded to another person or department within the company. Also, respondents were not allowed to return to the survey once the survey was started, except during the phase where there was an additional attempt made to contact those who partially responded. This also could have limited the responses since time had passed between when the employer started the survey and the subsequent request was sent to complete the survey.

Even though a power analysis showed that a sample size of 143 would be sufficient for an effect size of 0.3 (moderate), an alpha level (α) of 0.05, and power of 0.80, a larger sample size might have revealed statistically significant results. As previously mentioned the response rate for the survey was 3.8%. Multiple attempts were made to obtain survey data from the pool of potential participants. Additionally, a second email request was sent to those respondents that did not complete the survey in its entirety. Results of these attempts did not yield much success. Im and Chee (2003, 2004) cited difficulty in recruitment and low response rates as an issue with Internet research. In one article, they compared response rates among three studies ranging from 2% to 81% (though this rate fell to 10% by the end of the data collection period). Many explanations could account for the low response rates among small businesses. Primarily, respondents were not provided an incentive (such as money or gift cards) for participation. Additionally, small businesses are likely inundated with spam email and simply ignored the request or the request was “bounced back” as an unknown address. While Internet format surveys may not be the ideal medium for a large sample size need, it is a viable option for smaller survey needs.

Respondents were not forced to answer any of the survey questions, except for the first, consent question; therefore, missing data was encountered. Overall 299 small

business began to complete the survey; however, 150 (50.17%) of the surveys were missing more that 10% (4 questions) of the data. Of the 148 (49.50%) that remained, imputation of data were necessary to fill in the missing data on 40 (27.03%) of the surveys. Further analysis revealed that on question “In general, I want to do what other supervisors think I should do,” was most often missed (19 surveys, 12.8%) when responding to the survey. This question was not removed, rather data were imputed, as it was a matched question for the interconnectedness subscale, matched with question “Other supervisors like me think that I <should not – should> provide support for breastfeeding working mothers.”

Self-selection of participants became a salient issue during the data analysis. Im and Chee (2004) described this as a potential issue of Internet research. This issue can be difficult to resolve, as participants who have workplace lactation programs are more likely to respond to the survey do so in order to share their success (Im & Chee, 2004). Such responses lead to a homogenous sample and as a result of this self-selection, response bias cannot be ignored in these results. The survey participants tended to have workplace lactation programs and/or rate their intent to support workplace lactation programs as strong to very strong whether or not they had a workplace lactation program in place. This response bias influenced the validity and variability of the data and the non-significant results.

Statistical Analysis Concerns

Data and measurement concerns were noted during the data analysis. First, only one item in this survey addressed the construct of intent, as this was the only item utilized in the ESBQ. Limiting this construct to one item may have limited the variability of the results and failed to capture all the essential elements of "intent." A literature

search for other measures of intent could have revealed additional items that could have assessed intent more thoroughly and provided more variability in the responses.

Two cases were noted to be outliers during selected data runs. Upon review of the Cook's distance and the standardized residual, two cases were found to exceed Field's (2005) recommendations that any case with a standardized residual above three could be an outlier and that a Cook's distance value above one indicates a case that might be influencing the model. These two cases were isolated and examined, and values were noted to be out of range when compared to other cases. Both respondents indicated that they were not providing any type of lactation support; however, their intent scores were at the mean (case number 18 with an intent score of 3) or higher (case number 32 with an intent score of 5) of the group that did not provide support for breastfeeding working mothers. Additionally, their attitude scores were just below the average (case number 18 with an overall attitude score of 20) or higher (case number 32 with an overall attitude score 25). This was similar to the findings with the centralization, and interconnectedness subscales. These scores were not outside the range for other respondents that did not provide lactation support. Additionally, data were run without these two cases, and no influence was noted in the output; therefore, the decision was made to retain the cases.

Another concern was multicollinearity during the testing of the moderator intent and the independent variable, attitude. The multicollinearity was noted during data analysis, and the variables, intent and attitude, were centered to eliminate any multicollinearity. However, no further action, such as omitting any variables that involved collinearity (Field, 2005), was taken. Literature has suggested that these two variables may measure the same construct. Intent and attitude are often assessed concurrently

and can proxy as a measure for each other (Bridges et al., 1997; Dunn et al., 2004; Libbus & Bullock, 2002).

Theoretical Framework

The use of the Diffusion of Innovation theory in explaining breastfeeding support in small businesses appeared appropriate, but may not have been the most effective theory to describe the effect that attitude and intent have on the presence of workplace lactation support. Breastfeeding support and workplace lactation programs can be viewed as an innovation as defined by Rogers (2003) as a perception that an idea, practice, or object is new by an individual or organization. The constructs of the DOI theory allowed for the assessment of the presence of workplace lactation programs based on business characteristics and the Employer Support of Breastfeeding Questionnaire (ESBQ) (Rojjanasrirat et al., 2010). Traditionally, the DOI measures the adoption of innovations over time, through a defined process (i.e. agenda setting, matching, redefining/restructuring, clarifying, and routinizing) and categorizing organizations into adopter categories (i.e. Innovators, Early Adopters, Early Majority, Late Majority, and Laggards) (Rogers, 2003). This study was cross-sectional, looking at one point in time and did not assess the innovation process among those businesses who indicated they had a workplace lactation program in place, or classify respondents into adopter categories. Additionally, measuring intent during the early phase of understanding what facilitates or impedes small businesses from supporting breastfeeding in the workplace, may have contributed to the non-significant findings. However, with the recent passage of the Patient Protection and Affordable Care Act (H.R. Res. 3590, 2010), the findings of this study could serve as an “anchor” for future

studies that could measure the employers' adoption of lactation support programs over time.

This theory was useful in providing a systematic approach to frame the study and to analyze the independent variables, moderator, and mediators. While few of the findings were statistically significant, most of the models were a good fit for the variables. For example, when exploring the predictive relationship of business size to the presence of workplace lactation programs, the overall model appears to be a good fit, (X^2 (4) = 14.328, p = .006), accounting for 9-13% of the variances. Also, when assessing the relationship between attitude, centralization, and interconnectedness, the coefficients show that the model had a good fit, (X^2(5) = 20.57, p =.001). These three independent variables accounted for 13.46% to 18.52% of the variance in the model.

Additionally, Dunn et al. (2004) has suggested that the DOI could provide a framework for development strategies, according to the characteristics of adopter categories; however, this is beyond the scope of this study. Finally, the DOI has been utilized in at least one other type of employee wellness program, obesity prevention, and suggested that occupational health nurses could tailor environmental interventions to specific worksite needs (Gates et al., 2006).

It is important to note that Rojjanasrirat et al. (2010) utilized the Theory of Planned Behavior (TPB) as the theoretical basis for the development of the ESBQ. This theory is based on individual attitudes toward an object or idea and intent toward a specific behavior with respect to the object or idea (Montano & Kasprzyk, 2002). Since combinations of subscales and items from the ESBQ were used to measure the DOI constructs, it is possible that the items in the ESBQ did not translate appropriately to organizational behavior, thus posing an additional limitation of the study.

It is important to also compare the similarities and differences between the two theories, Theory of Planned Behavior and the Diffusion of Innovation theory. Similar to the DOI, it is suggested that a cross-sectional design may not be appropriate to use when conducting a study guided by the TPB (Montano & Kasprzyk, 2002). However, when comparing the TPB to the DOI, a lack of congruency among concepts and design is noted. The TPB is designed around direct and indirect measures, and constructs such as attitude, subjective norms, and perceived behavioral control. The TPB constructs assess beliefs, values, motivation, likelihood of occurrence and perceived ease or difficulty. The DOI utilizes constructs of individual leader characteristics, such as attitude toward change, and internal characteristics of the organizational structure, such as centralization, complexity, interconnectedness, and size. The constructs in the TBP center around the individual and his/her beliefs, motivations and perceptions; yet, only one construct in the DOI, attitude, assess an individual characteristic. Employers' beliefs toward offering workplace lactation support, motivation to provide the support, and perception of breastfeeding support, as measured by TPB, should be further explored in future research.

Other studies have utilized different theories to try to explain promotion of breastfeeding accommodation in the workplace from the employers perspective and these might prove to be useful for explaining the culture and practice in an organization. Beyer and Trice's seven stages of Organizational Theory (as cited in Heinig, 2007) has been suggested as such one theory, with the stages being (1) sensing of a problem or potential problem, (2) search for possible responses to the problem, (3) evaluation of alternatives, (4) decision to adopt a course of action, (5) initiation of action with the organization, (6) implementation of the change, and (7) institutional of the change.

Johnston and Esposito (2006) utilized Bronfenbrenner's Human Ecology Theory (1979) to review the literature about breastfeeding support. They cited that the workplace environment, including time off for maternity leave, required time on the job, flexible scheduling, equipment/physical design (i.e. a private place to pump) and policies on breastfeeding, are significant components of the breastfeeding woman's external environment or exosystem. Additionally, Johnston and Esposito classified social support in the workplace and by workplace supervisors, as a part of the woman's mesosystem, or her personal social relationships.

Finally, a qualitative design may be a more appropriate approach to assess employer attitudes and intent to support breastfeeding in the workplace to gain an understanding of factors that could influence an employer's intent to support breastfeeding in the workplace. Factors, not identified in the ESBQ, may have exerted a significant influence on an employer's decision to or not to provide lactation support in the workplace. In this study, some participants provided unsolicited textual comments that supported and opposed such programs. These were reviewed, but not incorporated into this study. A qualitative approach would have assessed the presence or absence of lactation support with a broad view and yielded robust data and identified themes not captured in the structured, close-ended question surveys. Open ended questions might include "What are the benefits to your business by providing a workplace lactation program?" or "What prevents your business from offering a workplace lactation program?" These questions could have captured more specific barriers and facilitators to the presence of workplace lactation programs. Use of the email documents for analysis could represent opinions that the participants have thoughtfully composed, in their own words (Creswell, 2003).

Implications and Recommendations for Nursing

Healthy People 2020 has added an objective to increase the percentage of employers who have workplace lactation programs (USDHHS, 2011). These workplace lactation programs have proven benefits to mothers, their infants and to the employer. Benefit for mothers include a decreased risk of breast and ovarian cancer, earlier return to pre-pregnancy weight, and a possible decrease risk in developing osteoporosis in the post-menopausal period (AAP, 2005). The benefits for the infant include protection from a wide range of infectious diseases such as bacterial meningitis, bacteremia, diarrhea, respiratory tract infection, necrotizing enterocolitis, otitis media, urinary tract infection, late-onset sepsis in preterm infants, decreased rate of SIDS, diabetes, certain cancers, obesity and asthma (AAP, 2005). Benefits to the business include decreased absenteeism and turnover (AAP, 2005; Brown et al., 2001; Dunn, et al., 2004; Libbus & Bullock, 2002; Meek, 2001; Witters-Green, 2003), cost savings (Ball & Wright, 1999), employee wellness (Brown et al., 2000), and recruitment and industry leadership (Brown et al., 2001; Dunn et al., 2004; Libbus & Bullock, 2002). Small businesses can perhaps experience the most from these direct and indirect financial benefits, such as less paid time off for employees to care for sick infants, employee loss as a result of a lack of breastfeeding support and subsequent new recruitment costs and the cost of training of new employees. As previously reported the majority participants of this survey provided some type of benefits for their employees, 70.1% offered health insurance, 89.7% offered vacation time, and 84.5% offered sick leave. The cost savings that result from a workplace lactation program can offset any hidden or outright expenses associated with the use of health insurance and sick leave, i.e. the infant is healthier as a result of

breastfeeding; therefore, the infant need less sick visits to the doctor and the mother uses fewer sick days to care for an ill infant.

There are many opportunities in nursing research for those that want to assess workplace readiness and implementation of workplace lactation programs. Further work is needed for instrument development, testing, and validation, so that studies can be conducted and yield results that provide information on the facilitators and barriers to workplace lactation programs. In addition, employers' beliefs toward workplace lactation support, motivation to support, and perception of breastfeeding support, should be further explored to identify determinants of workplace lactation programs. Factors that facilitate or prevent businesses' ability to provide lactation support need to be explored. Current nursing theories can be tested or synthesized, theories from other disciplines can be derived for the nursing profession, or new theories can be developed.

This study sought to understand the influence and predictability of independent variables such as attitude, business size, relative advantage, and intent on the presence of workplace lactation programs. While the majority of findings were non-significant, they could inform future studies on theory selection and development, design, and data analysis. For example, one could perform a secondary analysis of the data, using a different theory, such as the TPB. Although, this study found a significant relationship between attitude and presence of workplace lactation support, additional research is needed to better understand this relationship in small businesses.

Another area for additional research is to examine the continuum of business size – large, medium, small – with and without workplace lactation programs. Public health nurses, occupational health nurses, and/or breastfeeding coalitions would benefit from knowing how employer attitudes and their intent to support breastfeeding in the

workplace relate to each other, so that targeted assessments and interventions can be focused toward the specific level of organizational innovativeness. By assessing the characteristics of these businesses, a profile could be created of the type of business that would be a candidate for a workplace lactation program.

This research could then be translated to nursing practice. State and local health departments, occupational health nurses and/or human resources departments could use this information to implement workplace lactation programs or assist with existing programs such as the Texas "Mother Friendly" program. Moreover, there continues to be the need to quantify the savings associated with workplace lactation programs. It is this return on investment (ROI) that owners and manager need to evaluate in order embrace the idea of establishing a workplace lactation program and follow through with its implementation.

Implications and Recommendations for Public Policy

This study has provided data on workplace lactation programs during the infancy of the *Patient Protection and Affordable Care Act* (H.R. Res. 3590, 2010). Future studies may provide valuable comparison data on the implementation of Section 4207 to determine if employers with greater than 50 employees are in compliance. This law required employers to provide reasonable break time for an employee to express breast milk for her nursing child and a place, other than a bathroom, for which an employee may use to breast milk.

However, there is a political reality of the implementation and enforcement of strategies and policies to increase workplace lactation support. As described in Chapter Two, costs as a result of enforcement and potential litigation for non-compliance, may impact employers and taxpayers, affecting the diffusion of adoption of such programs.

Additionally, the nation has seen, as with managed care and their drive for lower healthcare cost through wellness (i.e. smoking cessation, obesity prevention). Employers could be offered incentives, such as lower premiums or rebates, from managed care companies for pregnant employees who initiate and commit to breastfeeding.

By understanding the underlying factors for the support of workplace lactation program, nurses and policy makers could better advocate for breastfeeding working mothers. In turn, policies and programs could be developed that benefit infants, mothers, and employers, through implementation of workplace lactation programs and thereby increase the rate of initiation and duration of breastfeeding to meet national goals.

Chapter Summary

This chapter summarized the purpose, sample, data collection, analyses, and findings of this cross-sectional study, which examined the relationships between employers' attitudes and intent to support breastfeeding in the workplace. The study findings were then compared to the limited prior research. Use of the Diffusion of Innovation theory and its usefulness was discussed. Limitations of the study and implications and recommendations relative to strategic planning, nursing practice, and future research were discussed. Results for this study will be used as preliminary findings for a larger, multi-site study in the State of Texas.

Appendix A

2-week Introductory Email

Date: Wed, 02 Feb 2011 21:49:59 -0600 [02/02/2011 09:49:59 PM CDT]
From: smillsRN@mail.utexas.edu
To: undisclosed-recipients:;
Bcc:
Subject: UTexas Doctoral Student Requesting Survey Responses/ UTexas Estudiante de doctorado solicitando respuestas a la encuesta

Dear Small Business Employer,

My name is Susan Mills and I am a Registered Nurse (RN) and Doctoral Candidate at the University of Texas at Austin School of Nursing. In approximately 2 weeks, you will be receiving an email with a link to a private, confidential survey regarding your businesses' support of mothers who return to work after childbirth. Participation in this survey is voluntary and will only take about 15 minutes of your time. I hope you will respond to this survey when it comes to your e-mail box.

Thank you for your support of student research!

Susan Mills, MSN, RN
University of Texas
School of Nursing

Mi nombre es Susan Mills y soy enfermera registrada (RN por sus siglas en ingles) y candidata al doctorado en la Universidad de Texas en Austin en la Escuela de Enfermería. En aproximadamente 2 semanas, usted recibirá un correo electrónico con un enlace a una encuesta privada y confidencial respecto al apoyo que proporciona su negocio a madres que regresan a trabajar después del parto. La participación en esta encuesta es voluntaria y solo tomara alrededor de 15 minutos de su tiempo. Espero que responda a esta encuesta cuando llegue a la bandeja de entrada de su correo electrónico.

¡Gracias por apoyar la investigación estudiantil!

Susan Mills, MSN, RN
Universidad de Texas
Escuela de Enfermería

Appendix B

Opening Email for Survey

To: [Email]

From: "smillsRN@mail.utexas.edu via surveymonkey.com"

Subject: UT Doctoral Student Requesting Survey Participation/Estudiante de Doctorado de UT solicitando participación en encuesta

Body: You are invited to participate in a survey, entitled “Employer Attitudes and Their Intent to Support Breastfeeding in the Workplace.” The study is being conducted by Susan Mills, MSN, RN, School of Nursing of The University of Texas at Austin, 1700 Red River Street, Austin, TX 78701, (512)589-8224, smillsRN@mail.utexas.edu.

Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty.

If you have any questions or would like us to update your email address, please call Susan Mills, MSN, RN at (512)589-8224 or send an email to smillsRN@mail.utexas.edu. You may also request a hard copy of the survey from the contact information above.

To complete the survey, click on the link below:

https://www.surveymonkey.com/s.aspx

This link is uniquely tied to this survey and your email address. Please do not forward this message.

If you do not want to receive any more reminders, you may email us at smillsRN@mail.utexas.edu or follow this link to opt out of future emails by clicking on the link below:

https://www.surveymonkey.com/optout.aspx

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board. If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish - the Institutional Review Board by phone at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

IRB Approval Number: 2010-11-0054

Thank you.

Esta usted invitado a participar en una encuesta, titulada ¨Actitudes de empleadores y su intento de apoyar la lactancia materna en el lugar de trabajo¨. El estudio está siendo conducido por Susan Mills,

MSN, RN, de la Escuela de Enfermería de la Universidad de Texas en Austin, 1700 Red River Street, Austin, TX 78701, (512) 589-8224, smillsRN@mail.utexas.edu.

Su participación en esta encuesta es voluntaria. Usted puede negarse a contestar alguna pregunta y tiene derecho a retirar su participación en cualquier momento sin ninguna penalización.

Si tiene alguna pregunta o quiere actualizar su dirección de correo electrónico, por favor llame a Susan Mills, MSN, RN, al número (512) 589-8224 o envíe un correo electrónico a la dirección smillsRN@mail.utexas.edu. Usted también puede solicitar una copia impresa de la encuesta.

Para completar la encuesta por favor haga clic en el siguiente enlace:

https://www.surveymonkey.com/s.aspx

Este enlace esta únicamente vinculado a esta encuesta y a su dirección de correo electrónico. Por favor no reenvié este mensaje.

Si no desea recibir más recordatorios, puede mandarnos un correo electrónico a smillsRN@mail.utexas.edu o puede optar por no recibir futuros correos electrónicos haciendo clic en el siguiente enlace:

https://www.surveymonkey.com/optout.aspx

Este estudio ha sido revisado y aprobado por la Junta de Revisión Institucional de la Universidad de Texas en Austin. Si tiene alguna pregunta acerca de sus derechos como participante de un estudio, o si está insatisfecho en algún momento con cualquier aspecto del estudio, usted puede contactar anónimamente, si desea, a la Junta de Revisión Institucional por teléfono al número (512) 471-8871 o por correo electrónico a la dirección orsc@uts.cc.utexas.edu.

Número de Autorización IRB: 2010-11-0054

Gracias.

Appendix C

Employer Survey

***Select to take survey in/Seleccione si quiere tomar el encuesta en:**

- English/Ingles
- Spanish/Espanol

***You are invited to participate in a survey, entitled "Employer Attitudes and Their Intent to Support Breastfeeding in the Workplace." The study is being conducted by Susan Mills, MSN, RN, School of Nursing at The University of Texas at Austin, 1700 Red River Street, Austin, TX 78701, (512) 589-8224, and smillsRN@mail.utexas.edu.**

The purpose of this study is to examine the attitudes and intent to support breastfeeding in the workplace by small business employers in Central Texas. Your participation in the survey will contribute to a better understanding of what influences employers' decisions to support breastfeeding working mothers. We estimate that it will take about 15 minutes of your time to complete the questionnaire. You are free to contact the investigator at the above address and phone number to discuss the survey.

Risks to participants are considered minimal. There will be no costs for participating, nor will you benefit from participating. Identification numbers associated with email addresses will be kept during the data collection phase for tracking purposes only. Only members of the research team will have access to the data during data collection. This information will be erased from the final dataset.

Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty.

If you have any questions or would like us to update your email address, please call Susan Mills, MSN, RN at (512)589-8224 or send an email to smillsRN@mail.utexas.edu. You may also request a hard copy of the survey from the contact information above.

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board. If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact - anonymously, if you wish - the Institutional Review Board by phone at (512) 471-8871 or email at orsc@uts.cc.utexas.edu.

IRB Approval Number: 2010-11-0054
If you agree to participate please press the "Agree" button at the bottom of the screen otherwise use the "X" at the upper right corner to close this window and disconnect.

Thank you.

◯ Agree

◯ Disagree

1. Total number of employees?

Number

2. Number of female employees?

Number

3. Number of childbearing age women?

18-24

25-35

36-45

4. General nature of business?

- ◯ Manufacturing
- ◯ Construction
- ◯ Research & Development
- ◯ Services
- ◯ Other (please specify)

5. Do you offer any of the following types of benefits to your employees?

	Yes	No
a. Health Insurance Plan?	◯	◯
b. Vacation Time?	◯	◯
c. Sick Time?	◯	◯
d. Short Term Disability?	◯	◯
e. Long Term Disability?	◯	◯

6. Do you participate in the Family Medical Leave Act?

◯ Yes

◯ No

7. Number of women within last 24 months that accessed FMLA as a result of pregnancy and subsequent birth?

Number

8. Are you a State of Texas designated “Mother-Friendly” business?

◯ Yes

◯ No

9. If yes, when did your business obtain the designation?

10. Are you aware of any women currently working in your place of business that are breastfeeding/expressing breast milk?

◯ Yes

◯ No

11. Are you aware of any employers of similar size providing lactation support to breastfeeding working mothers?

◯ Yes

◯ No

12. Are you aware of any similar type of employers providing lactation support to breastfeeding working mothers?

◯ Yes

◯ No

13. Do you provide a designated private room/place to pump?

- ◯ Yes
- ◯ No

13a. If yes, is the room designated as a lactation room on a permanent or "as needed" basis?

◯ Yes

◯ No

13b. If yes, does the room/place have:

	Yes	No
a. a locking door or an "occupied" sign?	◯	◯
b. access to clean, running water?	◯	◯
c. an electrical outlet?	◯	◯
d. a place to sit down?	◯	◯
e. good lighting and ventilation?	◯	◯

14. Do you provide:

	Yes	No
a. a place to store (refrigerator) breast milk?	◯	◯
b. break time for the employee to pump breast milk?	◯	◯
c. access to a certified lactation consultant?	◯	◯
d. breast pumps (sale or rent) for your breastfeeding working mothers?	◯	◯

15. Do you have a policy and procedure for lactation support for mothers returning to work?

◯ Yes

◯ No

16. Do you offer benefits such as paid time off for maternity leave for your employees?

◯ Yes

◯ No

17. Please indicate your sex:

- ◯ Female
- ◯ Male

18. Position held at company?

- ◯ Owner
- ◯ Manager/Supervisor
- ◯ Human Resources Representative
- ◯ Other (please specify)

.

A. Intention to Provide Support to Breastfeeding Working Mothers

According to the U.S. Department of Health and Human Services, the definition of support for breastfeeding in the workplace includes:
* Several types of employee benefits and services, such as policies to support breastfeeding women;
* teaching employees about breastfeeding;
* providing designated private space for breastfeeding or expressing milk;
* allowing flexible scheduling to support milk expression during work;
* giving mothers options for returning to work, such as teleworking, part-time, and extended maternity leave;
* providing on-site or near-site child care;
* providing high-quality electric breast pumps; and
* offering professional lactation management services and support.

Not every employer can provide this degree of support to each breastfeeding mother who is working in the company/business.

Based on this definition and the realities of work environment,

1. I would rate my intention to support breastfeeding (such as room, break time, breast pumps, information, or emotional support) in my workplace as:

	Very Weak				Very Strong
A1	◯	◯	◯	◯	◯

.

B. Other Peoples' Influence in Providing Support to Breastfeeding Working Mothers

1. Most people who are important to me think that I _____ provide support for breastfeeding working mothers.

	Should Not				Should	N/A
B1	◯	◯	◯	◯	◯	◯

C. Specific Other People and Providing Support to Breastfeeding Mothers

Directions:

1. If someone has never mentioned to you how they feel about providing support to breastfeeding mothers or if you feel that they are neutral, use the middle of the scale.

2. Use not applicable if:

a. The person in question does not apply/exist (e.g., you do not have a supervisor or manager) or you do not know how she/he felt about your providing support to breastfeeding working mothers.

b. Your relationship with the person is minimal or has ended and you do not know how she/he felt about your providing support to breastfeeding working mothers.

Regarding: Providing Support to Breastfeeding Working Mothers:

1. The head of my organization thinks that I__ provide support for breastfeeding working mothers.

	Should Not				Should	N/A
C1	◯	◯	◯	◯	◯	◯

In general, I want to do what the head of my organization thinks I should do.

	Unlikely				Likely
C1.2	◯	◯	◯	◯	◯

2. Other supervisors like me think that I___ provide support for breastfeeding working mothers.

	Should Not				Should	N/A
C2	◯	◯	◯	◯	◯	◯

In general, I want to do what other supervisors think I should do.

	Unlikely				Likely
C2.2	◯	◯	◯	◯	◯

3. My employees think I ____provide support for breastfeeding working mothers.

	Should Not				Should	N/A
C3	◯	◯	◯	◯	◯	◯

In general, I want to do what my employees think I should do.

	Unlikely				Likely
C3.2	◯	◯	◯	◯	◯

4. Other colleagues think I ____provide support for breastfeeding working mothers.

	Should Not				Should	N/A
C4	◯	◯	◯	◯	◯	◯

In general, I want to do what my colleagues think I should do.

	Unlikely				Likely
C4.2	◯	◯	◯	◯	◯

D. Feelings about Providing Support to Breastfeeding Working Mothers

Mark the spot on each scale that most closely represents how you feel.

To me, providing support for breastfeeding working mothers is:

	Necessary				Unnecessary
1.	◯	◯	◯	◯	◯

To me, providing support for breastfeeding working mothers is:

	Embarrassing				Not Embarrassing
2.	◯	◯	◯	◯	◯

To me, providing support for breastfeeding working mothers is:

	Negative				Positive
3.	◯	◯	◯	◯	◯

To me, providing support for breastfeeding working mothers is:

	Important				Unimportant
4.	◯	◯	◯	◯	◯

To me, providing support for breastfeeding working mothers is:

	Beneficial				Not Beneficial
5.	◯	◯	◯	◯	◯

E. Personal Beliefs about Providing Support to Breastfeeding Working Mothers

Below please indicate your personal beliefs about possible results that might occur if an employer provides support to a breastfeeding working mother and her baby, and how important those results are to both mother and baby.

Place your response to each item somewhere on the scale from unlikely to likely and then, not important to very important.

If I provide support to a breastfeeding working mother and her baby:

	Unlikely				Likely
1. The working mother and baby will be able to continue breastfeeding without difficulty.	◯	◯	◯	◯	◯
2. The working mother will be able to access information about breastfeeding.	◯	◯	◯	◯	◯
3. The working mother will be able to combine breastfeeding and work successfully.	◯	◯	◯	◯	◯
4. The breastfeeding working mother will feel satisfied with her role as a worker and a mother who contributes to the family.	◯	◯	◯	◯	◯
5. I will receive recognition for my time and efforts from my employees.	◯	◯	◯	◯	◯
6. I will have less turnover rate among employees.	◯	◯	◯	◯	◯
7. The breastfeeding working mother will experience satisfaction with her work.	◯	◯	◯	◯	◯
8. The company will receive recognition for the time and efforts from the public.	◯	◯	◯	◯	◯
9. The breastfeeding mother is able to get her work done.	◯	◯	◯	◯	◯
10. The baby will be able to breastfeed or receive breast milk while the mother is at work.	◯	◯	◯	◯	◯
11. The baby will have fewer illnesses. (Therefore, less employees' absenteeism)	◯	◯	◯	◯	◯

How important is it that:

	Not Important				Important
12. The working mother and baby will be able to continue breastfeeding without difficulty?	◯	◯	◯	◯	◯
13. The working mother will be able to access information about breastfeeding?	◯	◯	◯	◯	◯
14. The working mother will be able to combine breastfeeding and work successfully?	◯	◯	◯	◯	◯
15. The breastfeeding working mother will feel satisfied with her role as a worker and a mother who contributes to the family?	◯	◯	◯	◯	◯
16. I receive recognition for my time and efforts from employees?	◯	◯	◯	◯	◯
17. I have less turnover rate among employees?	◯	◯	◯	◯	◯
18. The breastfeeding working mother will experience satisfaction with her work?	◯	◯	◯	◯	◯
19. The company will receive recognition for the time and efforts from the public?	◯	◯	◯	◯	◯
20. The breastfeeding working mother is able to get her work done?	◯	◯	◯	◯	◯
21. The baby will be able to breastfeed or receive breast milk while the mother is at work?	◯	◯	◯	◯	◯
22. The baby has fewer illnesses?	◯	◯	◯	◯	◯

F. Control Over Providing Support to Breastfeeding Mothers

I am able to:

	Unlikely				Likely
1. Provide information about breastfeeding support for working mothers.	◯	◯	◯	◯	◯

As a manager/owner/director to breastfeeding working mothers, I am able to___ (item 2 – 4):

	Unlikely				Likely
2. Find time to provide resources (information, room, time) to each breastfeeding working mother.	◯	◯	◯	◯	◯
3. Find time to praise and encourage each breastfeeding working mother's efforts.	◯	◯	◯	◯	◯
4. Access equipment (i.e. breast pumps) when necessary.	◯	◯	◯	◯	◯

I am confident that I can provide support for the breastfeeding working mother.

	Unlikely				Likely
5.	◯	◯	◯	◯	◯

How much control do I have over providing support for the breastfeeding working mother?

	Very Little				Complete Control
6.	◯	◯	◯	◯	◯

For me, providing support for the breastfeeding working mother would be:

	Difficult				Easy
7.	◯	◯	◯	◯	◯

Whether I provide support to the breastfeeding working mother is entirely up to me.

	Strongly disagree				Strongly agree
8.	◯	◯	◯	◯	◯

The decision to carry out the activities necessary to provide support for the breastfeeding working mother is beyond my control.

	Strongly disagree				Strongly agree
9.	◯	◯	◯	◯	◯

I would be interested in receiving more information on how to become a "Mother Friendly Business" in the State of Texas:

- ◯ Yes
- ◯ No

For information on how to become a Mother Friendly Business through the State of Texas Department of State Health Services please provide the information below:

Name:	
Company:	
Address:	
Address 2:	
City/Town:	
State:	
ZIP:	
Email Address:	
Phone Number:	

*Esta usted invitado a participar en una encuesta, titulada ¨Actitudes de empleadores y su intento de apoyar la lactancia materna en el lugar de trabajo¨. El estudio está siendo conducido por Susan Mills, MSN, RN, de la Escuela de Enfermería de la Universidad de Texas en Austin, 1700 Red River Street, Austin, TX 78701, (512) 589-8224, smillsRN@mail.utexas.edu.

El propósito de este estudio es examinar las actitudes e intento de apoyar la lactancia materna en negocios pequeños en el centro del estado Texas. Su participación en la encuesta contribuirá a un mejor entendimiento de que influencia la decisión de los empleadores de apoyar a madres trabajadora en estado de lactancia. Estimamos que tomara alrededor de 15 minutos de su tiempo en completar el cuestionario. Es usted libre de contactar al investigador en el teléfono y dirección proporcionadas para discutir la encuesta.

Riesgos a los participantes son considerados mínimos. No habrá ningún costo por participar, ni habrá ningún beneficio por haber participado. Números de identificación asociados con la dirección de correo electrónico serán guardados durante la fase de recolección de datos con fines de seguimiento únicamente. Solamente miembros del equipo de investigación tendrán acceso a los datos durante la recolección de datos. Esta información será borrada del último conjunto de datos.

Su participación en esta encuesta es voluntaria. Usted puede negarse a contestar alguna pregunta y tiene derecho a retirar su participación en cualquier momento sin ninguna penalización.

Si tiene alguna pregunta o quiere actualizar su dirección de correo electrónico, por favor llame a Susan Mills, MSN, RN, al número (512) 589-8224 o envíe un correo electrónico a la dirección smillsRN@mail.utexas.edu. Usted también puede solicitar una copia impresa de la encuesta.

Este estudio ha sido revisado y aprobado por la Junta de Revisión Institucional de la Universidad de Texas en Austin. Si tiene alguna pregunta acerca de sus derechos como participante de un estudio, o si está insatisfecho en algún momento con cualquier aspecto del estudio, usted puede contactar anónimamente, si desea, a la Junta de Revisión Institucional por teléfono al número (512) 471-8871 o por correo electrónico a la dirección orsc@uts.cc.utexas.edu.

Número de Autorización IRB: 2010-11-0054

Si acepta participar por favor presione el botón que dice ¨Acepto¨ en la parte inferior de la pantalla, de otra manera use la ¨X¨ en la esquina derecha de la pantalla para cerrar la ventana y desconectar.

Gracias.

- ◯ Agree
- ◯ Disagree

1. Número total de empleados.

Número

2. Número total de empleadas.

Número

3. Número de mujeres en edad fértil.

18-24

25-35

36-45

4. Índole general del negocio.

- ◯ Fabricación
- ◯ Construcción
- ◯ Investigación y Desarrollo
- ◯ Servicios
- ◯ Otro (Por favor especifique)

5. ¿Usted ofrece algunos de los siguientes beneficios a sus empleados?

	Si	No
a. Plan de seguro medico	◯	◯
b. Vacaciones	◯	◯
c. Descanso por enfermedad	◯	◯
d. Discapacidad a corto plazo	◯	◯
e. Discapacidad a largo plazo	◯	◯

6. ¿Usted participa en la ¨La Ley de Ausencia Familiar y Médica¨ (FMLA por sus siglas en ingles)?

◯ Si

◯ No

7. Número de mujeres que han consultado La Ley de Ausencia Familiar y Médica (FMLA) como resultado de un embarazo y parto dentro de los últimos 24 meses.

Número

8. ¿Ha sido su negocio designado por el estado de Texas como un negocio adaptado para las madres?

◯ Si

◯ No

9. Si es así, ¿Cuando fue designado su negocio?

10. ¿Está usted al tanto de cualquier mujer(es) en su negocio, que este amamantando y/o extrayendo leche materna?

◯ Si

◯ No

11. ¿Está usted al tanto de empleadores de tamaño similar que estén proporcionando apoyo a madres trabajadoras en estado de lactancia?

◯ Si

◯ No

12. ¿Está usted al tanto de empleadores de tipo similar que estén proporcionando apoyo a madres trabajadoras en estado de lactancia?

◯ Si

◯ No

13. ¿Usted proporciona algún cuarto y/o lugar designado para la extracción de leche materna?

- ◯ Si
- ◯ No

13a. Si es así, ¿Está el cuarto de lactancia designado para su uso permanentemente o ¨según sea necesario¨?

◯ Si

◯ No

13b. Si es así, el cuarto y/o lugar cuenta con:

	Si	No
a. ¿Una puerta con seguro o un letrero de ¨ocupado¨?	◯	◯
b. ¿Acceso a agua limpia?	◯	◯
c. ¿Una toma de corriente eléctrica?	◯	◯
d. ¿Un lugar para sentarse?	◯	◯
e. ¿Buena iluminación y ventilación?	◯	◯

14. Usted proporciona:

	Si	No
a. ¿Un lugar para guardar (refrigerador) leche materna?	◯	◯
b. ¿Un receso para que la empleada se extraiga la leche materna?	◯	◯
c. ¿Acceso a un consultor(a) de lactancia certificado.	◯	◯
d. ¿Extractores de leche (venta o renta) para las madres lactantes trabajadoras?	◯	◯

15. ¿Tiene usted una póliza y procedimiento para el apoyo a madres en estado de lactancia que regresan al ambiente de trabajo?

◯ Si

◯ No

16. ¿Ofrece beneficios como ausencia de maternidad con goce de sueldo para sus empleadas?

◯ Si

◯ No

17. ¿Cuál es su sexo?

- ◯ Femenino
- ◯ Masculino

¿Cuál es su posición en la compañía?

- ◯ Propietario
- ◯ Gerente/Supervisor
- ◯ Representante de Recursos Humanos
- ◯ Otro (Por favor especifique)

A. Intención de brindar apoyo a madres trabajadoras en estado de lactancia.

De acuerdo con el Departamento de Salud y Servicios Humanos de Estados Unidos, la definición de apoyo a madres en estado de lactancia dentro del lugar de trabajo incluye:
*Diferentes tipos de prestaciones y servicios para empleados, como pólizas de apoyo mujeres en estado de lactancia;
*educar a las empeladas acerca del estado de lactancia, proporcionar espacios privados designados para amamantar o extraer leche materna;
*conceder horarios flexibles para la extracción de leche materna durante el horario de trabajo;
*darle a las madres opciones para poder regresar a trabajar;
*tales como teletrabajo;
*medio tiempo y ausencia de maternidad prolongada;
*proporcionar guarderías en el lugar de trabajo y/o cerca del lugar de trabajo;
*proporcionar extractores de leche materna eléctricos que sean de buena calidad; y
*ofrecer servicios y apoyo profesional para la lactancia.

No todos los empleadores pueden proporcionar este grado de apoyo a cada una de las madres en estado de lactancia que trabajen en su compañía y/o negocio.

Basado en esta definición y las realidades del ambiente de trabajo,

Yo calificaría mi intención de apoyar la lactancia materna (como proveer espacios privados, recesos, bombas extractoras, información, o apoyo emocional) en mi lugar de trabajo como:

	Muy débil				Muy a favor
A1	◯	◯	◯	◯	◯

B. Influencia por parte de otras personas en bridar apoyo a madres trabajadoras en estado de lactancia

1. La mayoría de las personas que son importantes para mí piensan que yo _____ brindar apoyo a madres trabajadoras en estado de lactancia.

	No debería				Debería	No aplicable
B1	◯	◯	◯	◯	◯	◯

C. Otras Personas Especificas y Brindando Apoyo a Madres en Estado de Lactancia.

Instrucciones:

1. Si alguien nunca le ha mencionado como se sienten y/o piensan respecto a brindar apoyo a madres en estado de lactancia o si usted piensa que son neutrales, use la casilla en el centro de la escala.

2. Escoja no aplicable si:

a. La persona en cuestión no aplica y/o existe (ej. usted no tiene un gerente y/o supervisor) o usted no sabe como ella y/o él se sienten y/o piensan respecto a brindar apoyo a madres trabajadoras en estado de lactancia.

b. Su relación con esta persona es mínima o se ha terminado y usted no sabe como ella y/o él se sentían con respecto a brindar apoyo a madres trabajadoras en estado de lactancia.

Con respecto a: Brindar apoyo a madres trabajadoras en estado de lactancia:

1. El director de mi organización piensa que yo _____brindar apoyo a madres trabajadoras en estado de lactancia

	No Debería				Debería	No aplicable
C1	◯	◯	◯	◯	◯	◯

Por lo general, yo quiero hacer lo que el director de mi organización piensa que debería de hacer.

	Poco probable				Muy probable
C1.2	◯	◯	◯	◯	◯

2. Otros supervisores como yo, piensan que _____ brindar apoyo a madres trabajadoras en estado de lactancia.

	No Debería				Debería	No aplicable
C2	◯	◯	◯	◯	◯	◯

Por lo general, quiero hacer lo que otros supervisores piensan que debería hacer.

	Poco probable				Muy probable
C2.2	◯	◯	◯	◯	◯

3. Mis empleados piensan que ___ brindar apoyo a madres trabajadoras en estado de lactancia.

	No debería				Debería	No aplicable
C3	◯	◯	◯	◯	◯	◯

Por lo general, quiero hacer lo que mis empleados piensan que debería hacer.

	Poco probable				Muy probable
C3.2	◯	◯	◯	◯	◯

4. Otros colegas piensan que yo _____ brindar apoyo a madres trabajadoras en estado de lactancia.

	No debería				Debería	No aplicable
C4	◯	◯	◯	◯	◯	◯

Por lo general quiero hacer lo que otros colegas piensan que debería hacer.

	Poco probable				Muy probable
C4.2	◯	◯	◯	◯	◯

D. Opiniones acerca de Proporcionar Apoyo a Madres Trabajadoras en Estado de Lactancia.

Marque el cuadro en la escala que mejor represente su sentir y/u opinión.

Para mí, brindar apoyo a una madre trabajadora en estado de lactancia es:

	Necesario				Innecesario
1.	◯	◯	◯	◯	◯

Para mí, brindar apoyo a una madre trabajadora en estado de lactancia es:

	Vergonzoso				No vergonzoso
2.	◯	◯	◯	◯	◯

Para mí, brindar apoyo a una madre trabajadora en estado de lactancia es:

	Positivo				Negativo
3.	◯	◯	◯	◯	◯

Para mí, brindar apoyo a una madre trabajadora en estado de lactancia es:

	Importante				No importante
4.	◯	◯	◯	◯	◯

Para mí, brindar apoyo a una madre trabajadora en estado de lactancia es:

	Beneficioso				No beneficioso
5.	◯	◯	◯	◯	◯

E. Creencias personales acerca de proporcionar apoyo a madres trabajadoras en estado de lactancia.

Abajo, por favor indique sus creencias personales acerca de posibles resultados que puedan ocurrir si un empleador brinda apoyo a una madre trabajadora en estado de lactancia y a su bebe, y que tan importantes son esos resultados para ella y para su bebe.

Ponga su respuesta para cada pregunta en la escala de ¨poco probable¨ a ¨probable¨ y después de ¨no importante¨ a ¨muy importante¨.

Si yo brindo apoyo a una madre trabajadora en estado de lactancia y a su bebe:

	Poco probable				Muy probable
1. La madre trabajadora y su bebe podrán seguir amamantando sin dificultad.	◯	◯	◯	◯	◯
2. La madre trabajadora podrá consultar información acerca de la lactancia materna.	◯	◯	◯	◯	◯
3. La madre trabajadora podrá combinar la lactancia materna con el trabajo exitosamente.	◯	◯	◯	◯	◯
4. La madre trabajadora en estado de lactancia se sentirá satisfecha con su rol de trabajadora y madre que contribuye a la familia.	◯	◯	◯	◯	◯
5. Recibiré reconocimiento por mi tiempo y esfuerzo por parte de mis empleados.	◯	◯	◯	◯	◯
6. Tendré menor taza de rotación entre empleados.	◯	◯	◯	◯	◯
7. La madre trabajadora en estado de lactancia sentirá satisfacción por su trabajo.	◯	◯	◯	◯	◯
8. La compañía recibirá reconocimiento por su tiempo y esfuerzo por parte del público.	◯	◯	◯	◯	◯
9. La madre trabajadora en estado de lactancia podrá terminar su trabajo a tiempo.	◯	◯	◯	◯	◯
10. El bebe podrá ser amamantado o recibirá leche materna mientras la madre está en el trabajo.	◯	◯	◯	◯	◯
11. El bebe tendrá menos enfermedades (Por lo tanto, habrá un menor absentismo de empleados).	◯	◯	◯	◯	◯

Que tan importante es:

	No Importante				Importante
12. La madre trabajadora y su bebe podrán seguir amamantando sin dificultad.	◯	◯	◯	◯	◯
13. La madre trabajadora podrá consultar información acerca de la lactancia materna.	◯	◯	◯	◯	◯
14. La madre trabajadora podrá combinar la lactancia materna con el trabajo exitosamente.	◯	◯	◯	◯	◯
15. La madre trabajadora en estado de lactancia se sentirá satisfecha con su rol de trabajadora y madre que contribuye a la familia.	◯	◯	◯	◯	◯
16. Recibiré reconocimiento por mi tiempo y esfuerzo por parte de mis empleados.	◯	◯	◯	◯	◯
17. Tendré menor taza de rotación entre empleados.	◯	◯	◯	◯	◯
18. La madre trabajadora en estado de lactancia sentirá satisfacción por su trabajo.	◯	◯	◯	◯	◯
19. La compañía recibirá reconocimiento por su tiempo y esfuerzo por parte del público.	◯	◯	◯	◯	◯
20. La madre trabajadora en estado de lactancia podrá terminar su trabajo a tiempo.	◯	◯	◯	◯	◯
21. El bebe podrá ser amamantado o recibirá leche materna mientras la madre está en el trabajo.	◯	◯	◯	◯	◯
22. El bebe tendrá menos enfermedades.	◯	◯	◯	◯	◯

F. Control sobre Brindar Apoyo a Madres en Estado de Lactancia.

Soy capaz de:

	Poco probable				Muy probable
1. Proporcionar información acerca de la lactancia materna para madres trabajadoras.	◯	◯	◯	◯	◯

Como gerente/propietario/director de madres trabajadoras en estado de lactancia, soy capaz de ____ (2-4):

	Poco probable				Muy probable
2. Encontrar tiempo para proporcionar recursos (información, cuartos, tiempo) para cada una de las madres trabajadoras en estado de lactancia.	◯	◯	◯	◯	◯
3. Encontrar tiempo para elogiar e incitar a cada una de las madres por su esfuerzo.	◯	◯	◯	◯	◯
4. Accesar el equipo (ej. bombas extractoras de leche materna) cuando sea necesario.	◯	◯	◯	◯	◯

Estoy seguro de que puedo brindar apoyo a madres trabajadoras en estado de lactancia.

	Poco probable				Muy probable
5.	◯	◯	◯	◯	◯

¿Qué tanto control tengo sobre el poder brindar apoyo a madres trabajadoras en estado de lactancia?

	Muy poco				Control total
6.	◯	◯	◯	◯	◯

Para mí, brindar apoyo a madres trabajadoras en estado de lactancia seria:

	Difícil				Fácil
7.	◯	◯	◯	◯	◯

El hecho de que yo brinde apoyo a madres trabajadoras en estado de lactancia depende totalmente de mí.

	Muy en desacuerdo				En total acuerdo
8.	◯	◯	◯	◯	◯

La decisión de proseguir con las actividades necesarias para brindar apoyo a madres trabajadoras en estado de lactancia esta más allá de mi control.

	Muy en desacuerdo				En total acuerdo
9.	◯	◯	◯	◯	◯

Estoy interesado(a) en recibir más información en cómo convertirme en un negocio adaptable a madres en estado de lactancia en el estado de Texas:

- ◯ Si
- ◯ No

Para información en cómo convertirse en un negocio adaptable a madres en estado de lactancia en el Departamento de Servicios Estatales de Salud del estado de Texas, por favor proporcione la siguiente información:

Nombre:	
Compañía:	
Dirección:	
Dirección 2:	
Ciudad/Pueblo:	
Estado:	
Código Postal:	
Dirección de correo electrónico:	
Numero de teléfono:	

Thank you for completing this survey!
Gracias por completar esta encuesta.

◯ Done

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Vita

Susan Elaine (Polston) Mills was born in Birmingham, Alabama on October 4, 1973, the daughter of Nelwyn Francis Jones Polston and Eddie Archie Polston. She graduated from Rangely High School in Rangely, Colorado in 1991 and attended the University of Wyoming in Laramie, Wyoming. Susan graduated with her Bachelor of Science in Nursing in 1996 and joined the staff of 5East (Neurology, Neuro ICU) at St. David's Hospital in Austin, Texas in 1997. It is here that she found her passion for education and teaching.

In May, 2001 Susan earned a Master of Science in Nursing from the University of Texas at Austin. While there, she was inducted into Sigma Theta Tau and Phi Kappa Phi. In 2005, Susan began her pursuit of a PhD. Over the course of 15 years she has served in many nursing roles including: staff nurse in a long-term care facility; nurse consultant for the State of Texas Department of Insurance, and; Chief Clinical Officer for a long-term acute care facility. Susan is currently serving as Director of Quality Assurance for Superior HealthPlans Inc./Network, a State of Texas Medicaid and Medicare vendor.

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This dissertation was typed by the author.